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"Scire est nescire, nisi id me Scire alius sciret."

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DISEASES OF THE LUNGS ASSOCIATED WITH THE PRESENCE OF FRIEDLANDER'S BACILLUS.

BY

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SEVERAL cases of pulmonary disease have recently been under my care in which Friedländer's bacillus was either obtained from the sputum in pure culture, or if in association with other organisms, appeared to be the chief morbific agent. The first question that arises is whether examination of the sputum can give an accurate representation of the process going on in the lung. Although there is considerable difference of opinion on this point, good authorities now hold that if the sputum is examined with certain precautions it does give such a representation. Bulloch[1] states that "in the careful and extended observations of Spengler there appeared to be a close connection between the conditions found in the sputum and lung respectively." In the

[1] *System of Medicine*, Allbutt and Rolleston, vol. v., p. 378.

following cases where there was a mixed infection that organism which was found ingested by the leucocytes was taken to be the important one.

B. Friedländer only accounts for a very small percentage of cases of pneumonia, and in these cases the lobar distribution is often due to an aggregation of lobular patches, with secondary patches of lobular pneumonia around the main area. The alveolar contents are viscid, due to a mucous secretion, the latter mechanically hinders the entrance of leucocytes into the alveoli, and therefore cells and fibrin are scanty.[1] The infiltration of the lung is apt to persist, and solution (lysis) of bacteria to be hindered because the bacilli are very resistant and cause only slight local reaction. Although it seems to be often a very severe affection, yet fever is often lower than in pneumococcal pneumonia, because on account of the slighter local reaction only few bacterial products are dissolved and absorbed. Abel and Hallwachs also state that there is a pronounced tendency to the formation of central patches of softening which may lead to the separation of necrosed patches of lung.

In mixed cultures B. Friedländer overcomes the pneumococcus.

It is well known that B. Friedländer is frequently present in affections of the nose and throat and elsewhere in the body, but in this paper I shall keep to pulmonary conditions. Friedländer's bacillus is found in pulmonary tuberculosis and chronic lung affections, in addition to being an occasional cause of pneumonia.

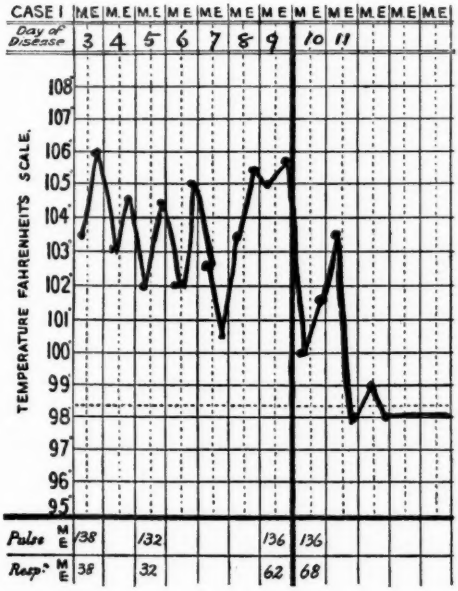
Case 1.—My first case is one of pneumonia of some severity, but of somewhat irregular course, in a girl aged 18, who had had no previous illness except enteric fever five years before. The illness began acutely three days before admission to hospital with vomiting, pains in the

[1] Abel and Hallwachs, *Handb. d. Pathogen. Mikro-organisms*, Jena, 1913, pp. 532-3.

right shoulder, a rigor, and high fever. She had eaten freely of ice cream the evening before the onset. On admission she was flushed, there was an outbreak of labial herpes, some diarrhœa, tongue thickly covered with a creamy white fur, pulse rate 140, respiration 38. Temperature 104°, rising to 106° the same evening.

Examination two days later showed dulness at the apex of the right lung, with bronchial breathing, coarse crepitations, and bronchophony ; there were deficient resonance and air entry at the right base, with coarse moist crepitations. A few scattered finer râles were heard over the base of the left lung. For the first two days there was also some general bronchitis. The heart and abdominal organs were normal ; the urine contained a trace of albumin. She coughed up a quantity of yellowish or yellowish green expectoration. Cultures made from this showed the presence of B. Friedländer and M. catarrhalis.

The illness ended by crisis on the eleventh day. The lung condition apparently cleared up completely, and she made a good recovery.



Differences from pneumococcal pneumonia are seen in the irregular oscillations of the temperature, the characters of the sputum, which was yellowish green, abundant and not blood-stained, and the absence, as shown by physical signs, of dense consolidation. Indeed, the signs at the right apex for two or three days suggested the possible formation of a cavity, and though the lung subsequently appeared to clear up, the case suggests, though it would not be safe to say more, that after such an illness the affected right apex might easily have contained a patch of necrosis, and become the starting-point of future disease, such as was found in case 3 below.

In the next two cases the pulmonary lesions were those typical of chronic pulmonary tuberculosis with excavation. So typical were the lesions in character, and especially in distribution, that from the physical signs the diagnosis of chronic phthisis was confidently made, and when the pathologist reported that no tubercle bacilli could be found in the sputum after repeated and careful investigation, such a result was totally unexpected.

Case 2.—J. H., æt. 45, a labourer. No family history of consumption or other disease. He had never had syphilis. Three years ago he suffered from shortness of breath, with some cough and difficulty of breathing. No renal symptoms at that time. Two years ago he was in hospital for six weeks with cough, shor ness of breath, and cramps in the legs. He completely recovered, lost his cough, and remained fairly well until two weeks before admission, when he was taken ill with a shivering fit, cough, shortness of breath, painful cramps in the limbs, and swelling of the legs and feet. He had had diarrhœa for some days.

September 12th, 1912. On admission he was pale, thin, aud badly nourished. The temperature normal, pulse 84, of high tension, arteries thickened, respiration 20. Tongue foul, thickly furred. Legs and ankles swollen, and a "lumbar cushion" of œdema. Urine, sp. gr. 1010, contained a large amount of albumin, and numerous epithelial, hyaline and

granular casts. Blood examination: red cells 4,700,000, whites 19,200 to c.m., hæmoglobin 86 per cent. Lungs: right upper lobe normal. At apex of left lung, front and back, there were dulness, bronchial breath-sounds, bronchophony, and some crepitations. At anterior part of axillary region was an area over which was dulness, cavernous breathing, bronchophony and pectoriloquy. At the lower angle of left scapula, over an area about three inches in diameter, were distinct signs of a cavity, *i.e.* high-pitched percussion note, cavernous breathing, liquid râles, post-tussive suction, and bronchophony. Coarse moist râles were heard over the bases of both lungs in front, and over the back of the chest as high as the lower angle of scapula. The heart was slightly enlarged, the blood pressure raised, and the edge of the liver felt about two inches below the ribs.

From the physical signs the condition of the lungs was looked upon as due to chronic tuberculosis with excavation. The sputum was large in quantity, purulent, and slightly offensive. The first culture showed presence of B. Friedländer and M. catarrhalis. Antiseptic inhalations were started from an oronasal inhaler, and carried out almost continuously. A second culture a week later gave a pure growth of B. Friedländer, and this continued to be the case whilst the patient was in hospital. Repeated examinations for T. B. were made, but always with a negative result. There were no elastic fibres in the sputum.

On October 1st a course of injections of a vaccine made from cultures of B. Friedländer was begun. At first five millions were injected, and the dose gradually increased up to five hundred millions. There was a slight local reaction at the site of injection after the first injection, but no reaction of any kind until the last dose was reached. One hour later the patient vomited, shivered, and the temperature rose to 101.8°. The result of treatment by rest, a full dietary, antiseptic inhalations, and specific vaccine was a gain in weight of 1½ stone, reduction of the large amount of purulent sputum to a negligible quantity, and no apparent effect on the kidneys except a slight fall in the amount of albumin in the urine; in physical signs a striking diminution in the moist râles which on admission were so general over the lower part of both lungs, and with this relief of cough and shortness of breath; no effect on the local lesions or cavities, which seemed to be steadily

extending and involving fresh portions of lung at their margins. At left apex there were now "box-note" on percussion in front with liquid râles, bronchial breathing, and pectoriloquy. The physical signs at anterior part of left axilla and at lower angle of scapula remained much the same, but audible over a somewhat larger area. It is not possible to say what share in improvement is to be attributed to the vaccines. Although the man had gained weight and improved in some respects, his condition was far from satisfactory when he left the hospital, as the destructive process in the lung was still continuing. Friedländer's bacillus was still present when the sputum was last examined.

Case 3.—A. B., æt. 31, cashier. Family history good. He had had two attacks of pneumonia, at the ages of 13 and 19. In the latter attack he was under my care, and on referring to the notes of his case I find that the pneumonia affected the whole of the right lung, and was most pronounced in the upper lobe; that it was of somewhat irregular type, the temperature showing considerable oscillations, and coming down about the sixth day. The lung is stated to have cleared up satisfactorily. He had been in good health since then except for a cough at times. He attributed his present illness to chill. He was ill in bed for a fortnight before admission to hospital with severe pains in right side of chest, cough, large amount of expectoration, shortness of breath, heavy night-sweats, and for the first week his temperature ranged between 101° and 103°.

On admission his temperature was 101.5°, but fell to 99° the next day, and remained between 98° and 99° during the rest of the illness. Pulse 96, respiration 24. Tongue, thick yellow fur, urine normal. He looked thin and ill, there was no cyanosis. The chest was flat, narrow, and showed well-marked lateral groves.

Lungs: dulness over right apex, above clavicle and over first and second intercostal spaces in front and over supra-scapular region behind, with bronchial breath-sounds, scattered moist râles, and bronchophony, and at outer anterior part of apex breath-sounds were cavernous, râles metallic, with post-tussive suction and pectoriloquy. On left side, at inner end of second intercostal space, in fifth and sixth spaces in axillary region, were patches of deficient

resonance, with small moist crepitation. The breath-sounds were harsh, attended with rhonchi and a few coarse râles over the back of the right lung, as high as lower angle of scapula and over the extreme left base. The heart was normal. The sputum was copious, not offensive, in nummular masses. Repeated examinations for T. B. were negative. Cultures gave the presence of B. Friedländer. He stayed three weeks in the hospital, and made a steady and uneventful progress towards recovery under ordinary treatment. At the end of this time his cough was very slight, and there was practically no expectoration. He gained 5 lb. in weight during the last week of his stay, and felt quite well. The rhonchi and moist sounds had completely cleared up over both lungs, but there remained in the outer part of the right apex, towards the axilla, distinct signs of excavation in the presence of dulness, cavernous breath-sounds, post-tussive suction, and pectoriloquy.

The distribution and character of the lesions in these cases were thus exactly those of progressive pulmonary tuberculosis. This distribution of lesions, originating near the apex, and spreading downwards therefrom, with an early focus of disease in the apex of the lower lobe, is one of the most valuable and distinctive signs in the diagnosis of pulmonary tuberculosis. Further, this distribution of the lesions does not correspond to the ordinary position of bronchiectases, which usually most affect the lower lobes. In the first case, the history of indefinite chest illness well consorts with pulmonary tuberculosis, and the question arises as to the share played by B. Friedländer in the lung destruction. The man's resistance would have been lowered by the existing chronic Bright's disease, and we might suppose that the pulmonary lesions were indeed produced by the B. tuberculosis, and that subsequently the cavities were invaded by the B. Friedländer, which turned out the tubercle bacillus. If this supposition is correct, the patient's condition was no whit the better, for the work of destruction appeared to be actively going on. Such an explanation is more difficult in the

second case, for the man was in good health until the onset of the present illness. In this case, however, it is difficult to suppose that a cavity apparently of some size could be produced in a fortnight. The previous history of two attacks of pneumonia is interesting, and also the known fact that the lung completely cleared up after the second attack. Bearing in mind the tendency of the B. Friedländer to cause local softening and necrosis, it is possible that the disease might have been insidiously going on for some time, until exposure to cold induced a sudden and considerable extension of mischief, and that the B. Friedländer might have been the only agent at work. If so, the close resemblance in physical signs to the lesions produced by B. tuberculosis is remarkable. On the whole, I incline to the view that in both cases the older lesions in the apices were produced by B. tuberculosis, and that a secondary infection by B. Friedländer occurred later, and caused the more general and patchy consolidation of the lungs. In both cases the onset of the present illness was marked by a very distinct sudden onset, with chills, fever, pains in the chest, and cough, with a very abundant purulent expectoration. In the subsequent course of the illness in each case, a notable fact is the maintenance of the temperature at or about normal, rarely exceeding 99°, in the presence of extensive excavation of the lungs, extensive areas of broncho-pneumonia, and the expectoration of large quantities of semi-purulent sputum. In the first case, the presence of chronic nephritis with its known tendency to cause a subnormal temperature, might partly account for the absence of hectic fever; but in the second case there was no such source of explanation. The reason for the apyrexial course of the disease may be found in the general account of some of the charactersitics of B. Friedländer given above.

In the other cases, B. Friedländer was found in association

with other micro-organisms, and presumably had engrafted itself on pre-existing chronic pulmonary lesions. Thus in three cases there was fibrosis of the lung, in two accompanied also with bronchiectasis, the sequel of previous attacks of pneumonia. Of these cases in one B. Friedländer was obtained in pure culture from the sputum, in another it was associated with a streptococcus, and in the third with M. catarrhalis. In all the sputum was large in quantity, thick, of a greenish yellow colour, and had a slight fœtor. In two of the cases a vaccine was used.

One patient was a single woman, aged 56. She had had nasal polypi removed, and for many years suffered from dyspepsia, but no other illness, and enjoyed fair health until four years ago, when she had left-sided pneumonia. Since then she had been in poor health, with loss of flesh, cough and expectoration daily of a quantity of muco-pus, which often had a disagreeable smell. She suffered from paroxysmal attacks of dyspnœa, in which she became extremely cyanosed. All symptoms had become aggravated since an attack of influenza six months previously. Examination of the chest showed on the left side thickening of pleura with fibrosis of the lung, and signs of bronchiectasis towards the base at the back, probably originating in an unresolved pneumonia. The heart's apex was displaced outwards from the contraction of the left chest. The other organs and the urine was normal. There was no œdema.

Examination of the sputum showed the presence of B. Friedländer and the pneumococcus. The lung was punctured, and from the material withdrawn the same organisms were cultivated. She was treated by rest, good feeding, intra-tracheal injections of izal and glycerine, and by a vaccine prepared from cultures of B. Friedländer, as Mr. Scott-Williamson considered this to be the active organism. Injections, beginning with a dose of two millions,

and increasing up to 500 millions, were given on July 9th, 10th, 11th, 12th, 13th, 20th, 23rd, 24th, 25th, 26th and 27th. The only direct effect noticed was that on two or three occasions there was a little redness and soreness of the arm at the site of injection. There was no change in the condition of the lung. A second mixed vaccine, of B. Friedländer and pneumococcus was then prepared, and five doses, ranging from five to 100 millions were given between August 1st and 5th; again without appreciable effect. She left the hospital on August 8th. The net result of six weeks' treatment was a considerable improvement in general health, a gain of 7 lb. in weight, great improvement in shortness of breath, and disappearance of the distressing attacks of dyspnœa, reduction of the large quantity of sputum to an inappreciable amount, and loss of fœtor of sputum and breath. The physical signs in the lungs remained practically unaltered.

Another of the cases was under the care of Dr. Symes, who has very kindly allowed me to use his notes.

The patient, a woman aged 24, was in hospital in August, 1912, with eclampsia, which was followed by double pneumonia. She was ill eight weeks. Since that time she had constantly coughed up large quantities of frothy greenish yellow sputum with an offensive odour. Repeated examinations for B. tuberculosis had given a negative result. Previous to this illness she enjoyed perfect health. Examination of chest showed fibrosis of the lower lobe of the left lung with bronchiectases. Examination of the sputum showed presence of B. Friedländer and of M. catarrhalis. She was four weeks in the hospital; during the whole time the temperature was normal. A vaccine was prepared from cultures of B. Friedländer, and injected on July 14th, 16th, 18th, 21st, 23rd and 25th, beginning with a dose of five millions and increasing up to two hundred

millions. No appreciable effect was observed on the temperature or otherwise from the injections. She gained 5 lb. in weight and improved in general health. The cough was much relieved, the quantity of sputum greatly reduced, and it became much less offensive. No note was made as to the condition of the lung, which was presumably unaltered as to the fibrosis and bronchiectases.

The absence of any fever in both these cases is worthy of note.

In another case a man, whilst eating some chicken soup, swallowed one of the chicken's neck vertebræ; he felt it go "the wrong way;" and had a violent fit of choking and coughing, with subsequent pain in the upper part of the left chest. I saw him about eight months afterwards. He was then emaciated, weak, had a severe paroxysmal cough, and coughed up 8 to 12 oz. daily of yellowish offensive sputum. Examination showed deficient expansion, air entry, and resonance over the left lung, front and back, except the upper part of the upper lobe, over which the breath sounds were bronchial. Rhonchi were heard over the whole lung, with a few moist sounds at the extreme base. At the lower part of the left interscapular region, over an area of three inches in diameter, there was dulness, absent breath sounds at times, at others distant bronchial breathing, and increased vocal resonance. There was no fever, just as in the other cases. Friedländer's bacillus, pneumococci, and M. catarrhalis were found in the sputum. Mr. Scott-Williamson considered the B. Friedländer to be the important organism, and although I was not very sanguine as to any good results whilst the bone was still there, I thought that a vaccine might possibly improve the condition of the surrounding lung. A course of vaccines was therefore given, but without result. The subsequent history is interesting. His wife came to visit him whilst she had

acute influenza; he contracted it from her, and the course of the illness entirely changed. For the next four weeks he had a swinging temperature of 100° a.m., to 102° or 103° p.m. Loud bronchial breathing and moist coarse crepitations appeared over the area of consolidation in the interscapular space. Examination of the sputum gave a pure culture of the B. influenzæ, which thus appeared to have turned out the other organisms. He insisted on going home, got gradually better, and one Sunday whilst in church he had a violent paroxysm of cough, and coughed up the chicken's vertebræ, which he brought up to show me.

I gratefully express my thanks to Mr. Scott-Williamson for his careful bacteriological examinations in these cases.

SOME UNUSUAL CONDITIONS FOUND IN OPERATING FOR THE RADICAL CURE OF HERNIA.

BY

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IN operating for hernia with retained testis, it is not uncommon to find that the vas makes a slight excursion in the wall of the sac in front of the testis. In a case on which I operated this complication occurred to so marked a degree that the vas extended for almost three inches in front of the testis. I did not recognise that I was dealing with the vas so far in advance of the testis, and divided it on the side on which I first operated, and I think the record of the case may

be a valuable caution to other surgeons in operating for this combination of hernia with retention of the testis within the abdomen.

W. T., aged 18, was admitted to the General Hospital on June 4th, 1912. The scrotum was very imperfectly developed, and there was no sign of the testicle on either side. There was then no sign of a hernia on the right side, but he said that from time to time a small swelling appeared in that inguinal region. On his left side there was a small swelling between the external ring and the top of the imperfectly-developed scrotum, which disappeared when he lay down. It did not feel like even an abnormally small testis, nor did it feel quite like a hernia. He told us that this swelling had appeared at intervals, when he was about, ever since he could remember anything of the appearance of the parts.

At the operation, on dividing the external oblique on the left side, and thus laying open the inguinal canal, the sac was at once exposed and I opened it. In its floor lay a thick fold, which looked as if it might be the cord, but it terminated about the region of the external ring, gradually shelving down to the level of the sac wall. It seemed to contain some large veins, and I thought I could feel the vas in it, but it seemed difficult to understand how the vas could be running, as it apparently did, from the testicle out through the external ring. I found the testis just inside the internal ring. It was quite small and the globus major was very loosely attached to it, and the globus minor was spread out in the sac wall. I then felt whether I could detect the vas running from the testis under the parietal peritoneum, through the obturator region down to the base of the bladder; I could quite distinctly do so. I therefore concluded that the thick fold in the floor of the sac, which was almost three inches in length, could not be the cord, and I decided to cut the sac across just beyond the testis, *i.e.* through this fold, remove the distal portion (which reached as far as the top of the imperfectly-developed scrotum), and make a covering for the testis of the remainder. The testis, with this covering, was then pushed well into the peritoneal cavity, and the internal ring closed by suturing. On examining the sac after removal, I found that it undoubtedly contained the vas and some veins of the cord. The vas had been twice divided, where it ran parallel with itself, for after leaving the testis it made a

long loop in the fold in the sac wall, and then returned to the region of the internal ring to descend towards the base of the bladder. Having elucidated this puzzling condition on the left side, I could now make out the relation of the parts in the right hernial sac. It also had a fold in its floor, but not such a thick one as on the left side, and the testis also lay on this side just inside the internal abdominal ring. On separating the sac from the inguinal canal and holding it against the light, I could trace the vas coming from the end of the spread-out globus minor, making a long loop in the sac wall, and returning to the internal ring, from which I could follow it with my finger, passing down to the region of the bladder under the peritoneum, as on the other side. I found it was impossible to remove more than quite the distal end of the sac without damaging the vas, and I had first to return the testis into the abdomen, and then the remainder of the sac after it, closing the internal ring by passing a purse string suture round it, partly through the peritoneum and partly through the loose subperitoneal connective tissue. It was quite impossible to dissect up the very thin peritoneum off the spread-out globus minor and elements of the cord. The peritoneum was extremely thin, and these structures were incorporated with it. In operations for hernia in children the peritoneum of the sac is often extremely thin and difficult to separate from the elements of the cord: this can generally be done sufficiently to get a sac neck to tie, but in this case it would have been quite impossible.

It is a much-debated question whether such imperfectly-developed testes as this patient had, lying within the peritoneal cavity, are capable of secreting spermatozoa, and therefore it is quite possible he is not any the worse for the removal of the left vas, but as it seemed just possible they might form spermatozoa, I did not like to remove it on the other side as well, though if I had removed the sac on this side also it would have made it a more thorough operation for the cure of the hernia. On both sides I dealt with the inguinal canal by the ordinary Bassini's method, and I was of course able to completely close each external ring.

I am not quite certain what it was I felt before operation

on the left side. It could not have been the testis, for it could not come near the external ring. I am inclined to think it was the sac, with the very thick fold already referred to, in it.

The only reference I have been able to find to anything like the condition I found in this case is in Mr. McAdam Eccles's book on *The Imperfectly Descended Testis*. He says (page 81): "When the testis has remained behind in the abdomen, and a peritoneal pouch has descended into the canal, it occasionally happens that the vas deferens, or even the epididymis have also passed into the passage, and may be felt as cords lying posterior to the hernial sac."

This is what happened in my case, but what seems to me the point of special interest in my own case was the great length to which the loop of cord extended in the sac wall in front of the testis. A very misleading feature of the condition is the way in which the vas can be traced running from the region of the retained testis down under the parietal peritoneum towards the base of the bladder, so that one is apt to think a fold in the floor of the sac a considerable distance in front of the testis cannot contain the vas, whereas the vas is making a long loop in the fold and returning to the region of the testis, and then descending in the usual position under the parietal peritoneum to the base of the bladder. It seems to me that a description of the details of my own case may be a help to any surgeon who comes across a similar condition.

In operating for radical cure of hernia, it is not uncommon to find masses of fat in the inguinal canal, associated with the presence of a hernial sac. They are protrusions of the sub-peritoneal fat, but may only be connected with it by a narrow pedicle. But in two cases in which I recently operated and found such masses of fat, there was no true sac. In one case such a mass of fat protruded from the external ring, and in the other through the crural canal.

There is a paper in the *Annals of Surgery* for February of last year (1913) by Dr. Louis Freedman, of New York, on "Hernia Adiposa," as he calls this condition, with a record of one case. In this case the fat hernia was not reducible, and simulated an irreducible omental hernia. In one of my own cases it was reducible, but the piece of fat of course reduced only into the inguinal canal, yet it seemed to reduce as completely as any small ordinary hernia may. It is quite likely that in cases like my own, in which there is no true sac, in the course of time a process of peritoneum may be drawn out by the descending lump of fat, and then the more common form of combined sac and fatty mass found. The growth of these fatty masses must in all cases open up the inguinal canal ready for the descent of a hernia, even if they do not actually drag down a peritoneal sac. In performing a radical cure of hernia, in which masses of fat are present in addition to a true sac, it is very important to remove them from the inguinal canal. If in operating for cure of hernia such a fatty mass as I found in these two cases appeared the only abnormal structure present, it would be necessary to examine with great care that no hernial sac, however small, was buried in it, and also that it did not contain a very small portion of the bladder.

Small protrusions of subperitoneal fat, without a definite peritoneal sac, not rarely occur through holes in the aponeurosis at the linea alba, but a fat hernia is not common in the inguinal or femoral regions, and though they were fully described by Mr. J. Hutchinson as long ago as 1886 in the *Transactions of the Pathological Society* (Vol. 37), there is very little information about them in some books on hernia, or in the ordinary text books of surgery. Mr. Hutchinson says it is almost impossible to distinguish them from omental hernia, and in several other cases besides mine operation has been performed under the impression that the

swelling was an ordinary hernia. No doubt operation is good treatment, for as Mr. Hutchinson points out, the descent of a lump of fat is likely to drag down a true hernial sac in time, and the patient could not tell when that had occurred. Mr. Hutchinson very well describes the usual appearance of these fatty masses. He says, "The capsule in some cases very closely resembles peritoneum, the chief difference is, that it usually gives off many septa which lie between the contained lobules of fat."

A man, S. B., aged 50, was sent to me at the General Hospital in February, 1913, with a good-sized hydrocele which had been present for six years, and reached up to the external ring. When it was tapped a soft protrusion the size of a walnut could be made out at the external ring on coughing, and I diagnosed a hernia which had before been kept up by the hydrocele acting as a truss. On February 28th I operated on the hydrocele, and then laid open the inguinal canal for the radical cure of hernia. There was no true hernial sac, but a loose elongated mass of fat occupied the canal, and lay by the side of the cord. It formed a soft lipoma, and evidently grew from the subperitoneal fat at the region of the internal ring. The external ring was enlarged. I removed this fatty mass, and then found a similar one protruding from the subperitoneal fat in the iliac fossa, under the cord. It was divided into two lobes by the passage of the deep epigastric artery over it. I tucked this mass more deeply down into the iliac fossa, and then united the internal oblique and transversalis to Poupart's ligament as in Bassini's operation, and in uniting the external oblique narrowed the external ring.

I have operated on another case for radical cure of inguinal hernia, a man 48 years of age, in which I found a very small sac combined with several well-marked fatty masses. So small was the sac, that it seemed to me it could never have protruded through the external ring, but that the fatty masses did so, and had dragged down the small sac in their descent.

A woman, G. V., aged 27, was sent to me at the General Hospital in September last for radical cure of double inguinal hernia. I thought there was also a very small femoral hernia on the right side. I operated on each inguinal hernia, and on passing my finger down below Poupart's ligament on the right side into the region of the saphenous opening, I found a femoral hernia the size of a small marble. There was no true sac, and it was only a protrusion of subperitoneal fat. I exposed its neck from the deep aspect, through the incision just above Poupart's ligament made for the cure of the inguinal hernia, and then drew the protrusion of fat back through the crural canal, and carefully searched for a small sac, but found none. But I closed the deep aspect of the crural ring in the usual manner when operating for radical cure of femoral hernia by the inguinal method.[1]

The third unusual condition I have met with when operating for the cure of hernia, which I will describe in this paper, is the formation of a cyst on the round ligament, at the external ring, associated with a very narrow track of open peritoneum extending along the round ligament. The case was a very puzzling one before operation. In a woman, A. J., aged 30, who came under my care at the General Hospital in March, 1913, there was a small fluctuating swelling just over the external ring. It did not in the least feel like a hernia, but the patient stated that it had been decidedly larger than it was at the time of examination, so that the suspicion was raised as to whether it might not be associated with the descent of a hernia at times. It was found at the operation to be a cyst in the end of the round ligament, and there was a very narrow open process of peritoneum extending down the inguinal canal to it, but the lumen of the process was too small for the descent of any

[1] Since this paper was written I have operated on a case of inguinal hernia in a woman, and found a lump of subperitoneal fat incorporated with the distal end of the sac. The sac wall was so completely merged into the lump of fat that it is not likely the sac in its descent had pushed it before it, but rather that the rupture had started as a fat rupture, and then dragged down a true peritoneal sac.

bowel, or more than the very finest tag of omentum. Still such an open tube of peritoneum did constitute a form of hernial sac. It terminated at the cyst, and it is quite possible that the cyst may have originated in a portion of the tube, which became shut off. The cyst contained clear fluid. Such cysts are sometimes called hydroceles of the canal of Nuck.

ON DIGITAL PERCUSSION AND THE CARDIAC SIGN IN CARCINOMA.

BY

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THE CARDIAC SIGN.

A Summary.

THE cardiac sign in carcinoma is a remarkable diminution of the area of cardiac dulness in the recumbent posture as determined by digital percussion. In that posture the dulness, in the normal adult, begins above about the third costal cartilage, reaches rightwards as nearly as possible to the mid-sternal line, and measures across about 3 to 3½ inches at the level of the fifth costal cartilage. On the other hand, in the carcinoma patient who presents the sign the cardiac dulness in recumbency begins above about the fourth or fifth costal cartilage, has its rightward edge about half an inch or 1 inch to the left of the mid-sternal line, and measures across less than 2 inches at the level of the fifth costal cartilage. Often it measures less than 1 inch across. Sometimes there is no cardiac dulness at all.

The sign is often associated—by no means always—with a remarkably soft and toneless pulse and feeble heart sounds.

There are three different conditions which may help to explain this diminution in the dulness :—

1. In some cases of carcinoma the heart is small, and this reduction in size has been held to account for the reduction of the dulness. It may sometimes partly account for it, but certainly not invariably, for often the dulness, though narrow in the recumbent posture, is normally or even abnormally broad in the erect.

2. If the loss of elasticity, so common in the skin in cases of carcinoma, affects the lung as well, it is conceivable that ordinary breathing may induce a sort of spurious emphysema, and so lessen the heart-dulness. It is now known that a peculiar form of emphysema not uncommonly occurs in carcinoma—Fenwick found it in 28 per cent. of his cases of gastric carcinoma—and no doubt in many cases this helps to produce the sign.

3. As has just been said, the cardiac sign is often associated with a very soft and toneless pulse and with feeble heart-sounds. If we suppose that the first is due to a deficiency of blood—such as the anæmia so often present would suggest—and that the second shows a flabbiness of the heart muscle comparable to the flabbiness of the skeletal muscles so commonly noticeable in such patients, it is not difficult to imagine a flabby and imperfectly filled heart dropping back, on recumbency, from the anterior chest-wall, more than a normal heart would do. And this is just what seems to occur. For the disparity in area between the heart-dulness in the erect and recumbent positions in carcinoma is usually much greater than that observed either in health or in other diseases. I have found, for instance, a heart-dulness in a case of carcinoma measuring 5 inches

across in the erect position narrow to 1½ inches across when the recumbent position was assumed.

Certain limitations exist to the significance of the sign. Thus when any cause is present, tending, like ordinary emphysema, to reduce the area of cardiac dulness, then a very small dulness naturally conveys no special meaning. On the other hand, when there is any well-known cause of enlargement of heart-dulness, such as albuminuria, valvular heart disease, pericarditis, or retraction of lung from phthisis or past pleurisy, then the absence of the sign is equally without significance. Moreover, where the heart is displaced considerably upwards the absence of the sign is unreliable, since the organ has been moved from a wider into a narrower space, in which it is not so free to fall back from the anterior chest-wall on recumbency. And lastly, where a large œsophageal carcinoma has lain directly behind the heart, I have thought that the absence of the cardiac sign was due to the growth pinning the organ forward against the sternum and rib cartilages.

Yet allowing for all these limitations, a very large number of cases remain in which its help is of value. All the cases to which I am now about to allude have been free from such sources of error.

In 1908 I published a series of 103 cases [1], into all of which a suspicion of carcinoma had entered. Of 38 in which a presumable cancer was either naturally accessible to direct examination or was examined at operation or *post-mortem* 89 per cent. showed the sign; of 19 which ended fatally in accordance with a diagnosis of malignancy nearly 90 per cent. showed it. On the other hand, the sign was present in only 24 per cent. of 46 cases which could not be supposed to have been malignant.

Again, last year I dealt with a further series of 73 cases [2] in all of which the diagnosis of carcinoma had to be considered;

of 36 which seemed undoubtedly to have been cancerous 83 per cent. gave the sign, whereas of 37 which could not be regarded as having been cancerous only 14 per cent. gave it.

Last month I published a third series of cases [3], containing 42 in which the sign was available, all more or less suspicious as regards cancer; of 18 in which carcinoma was clearly present 88 per cent. showed the sign, whereas of 24 cases which were clearly non-carcinomatous only 8 per cent. gave it.

In all these three series, therefore, a marked contrast has appeared betwixt cancer cases and cases not cancerous, in respect of the frequency of occurrence of the sign. Taking them all together, of a total of 111 cancerous cases 97 (87 per cent.) gave the sign, whereas of a total of 107 non-cancerous cases only 18 (16 per cent.) gave it.

To test further the actual practical utility of the sign, I began on October 1st, 1912, to set down in easily accessible form every diagnosis of "cancer" and "not cancer" which I made in cases which were definitely doubtful when they were submitted to me, and these diagnoses I followed up so far as was possible, in order to discover how many and what sort of mistakes I had been making. At the same time, not more than half a dozen cases were set aside as uncertain. With the help of the cardiac sign, I was only wrong in 6 per cent. in a series of 50, a result which I feel sure I could not have attained without such considerable help [3].

But it has been suggested that the sign is no more than a corroboration of marked wasting. This is untrue, since in non-cancerous wasting, even when extreme, the sign is rarely found, in carcinomatous wasting, even when marked, it is sometimes absent, in cancerous cases which have not wasted at all it is sometimes present, and the diminution of the dulness in cancer cases is not proportional to the wasting [2].

Another suggestion has been that it is partly the result of senility. An examination of the gastric cases in my tables (for clearly in such an inquiry we must limit ourselves to a single organ, as the age incident of carcinoma is not the same in all tissues) lends little support to this view[1].

Thus, whereas of 43 cancerous cases at all ages 37, or about 86 per cent., gave the sign, of 38 of these cases, all at or over 45 years of age, 34, or about 89 per cent., gave it, and of 29 of these, all at or over 55 years of age, 26, or about 89 per cent., gave it; whilst of non-cancerous cases, whereas of 57, at all ages, only 10, or about 17 per cent., gave the sign, of 37 of these cases, all at or over 45 years old, 8, or about 21 per cent., gave it, and of 21 of them, at or over 55, 4, or about 19 per cent., gave it.

I would sum up my experience as follows:—

1. The sign is of practical value.

2. When present in a case of possible carcinoma, the diagnosis of carcinoma should only be rejected after most careful consideration.

3. When present in what must be, if carcinoma at all, a late case of it, its absence strengthens considerably the hope of the absence of carcinoma.

There remains to consider its period of appearance. The importance of an early sign of carcinoma would be great indeed. But here, unhappily, one is not yet in a position to gauge its frequency, because so few cases have presented themselves in an operable stage. Cases are, however, accumulating in which it has appeared in time to enable a successful resection to be carried out. In one such case (cancer of the sigmoid) a well-known surgeon declined to admit that a diagnosis was possible; but it had fortunately been made, which was the reason he had been sent for, and at operation a carcinoma was found and removed; that was six years ago, and there has been no recurrence.

It is possible that the sign may appear earlier in carcinoma of one organ than in carcinoma of another, but as yet the collected cases are too few to safely divide them according to the organs affected, or even to compare its commonness of occurrence in cancers in different situations. Most of my cases have been of carcinoma of the alimentary canal.

In sarcoma I believe that the sign is unreliable, but my observations have been too few to make sure of this.

It is necessary to add that my explanation of the sign has been questioned by Dr. Albert Abrams, of San Francisco, who writes as follows[5]:—

"The cardiac sign of Gordon in cancer has prompted me to study the amplitude of the heart reflex of contraction as influenced by posture.

"Gordon's explanation of the phenomenon is unsatisfactory. It is most probably caused by the elicitation of the heart reflex of contraction by the negative discharge of energy from carcinomata.

"Why is the reflex in question only in evidence in the recumbent posture? My investigations demonstrated that the heart reflex when evoked has double the amplitude in the recumbent than in the erect posture, owing to the fact that the tone of the cardiac musculature in recumbency is relatively diminished, and in consequence it more readily responds to influences which evoke the reflex."

Note on Digital Percussion.

It is now ten years since attention was first called to the cardiac sign[6], and seeing how defective are our means of diagnosing internal carcinomata, even late, it might be supposed that it would have been generally used. It certainly has received a wide recognition, but it is equally

certainly not in general use. And the inevitable inference is even more important than the sign.

For one of two things must be true. Either the observations above summarised are erroneous, or there must be something amiss with the digital percussion of those who cannot substantiate them.

Naturally I believe my own frequently repeated observations are correct, yet if they were unverifiable by others the presumption would be strong that some fallacy underlay them. They have, however, been verified by others, and the question arises how does digital percussion differ throughout the profession.

I have no sort of doubt why some observers fail to verify the sign. They do not percuss with the requisite precision. This seems a bold statement and certainly needs justifying. A little reflection will, I think, convince most men that there is justification for it. The directions given in every text-book are doubtless sufficiently precise—that the finger percussed should lie flat, evenly and lightly on the chest wall, parallel to the edge of dulness to be defined, that percussion should be from the wrist, and that the percussion finger should be bent, as in piano playing, to deliver its stroke perpendicularly to the chest-wall. But how many percussors follow these directions? To the piano player they are simple, natural and easy, but to others not so trained they require an amount of attention and practice seldom given to them. Consequently, instead of the clear, clearly audible note which digital percussion ought to elicit, whether light or heavy, only a blurred indistinct sound is evoked, quite incapable of exact delimitation of dull or resonant areas. To such percussion the cardiac sign is undiscoverable.

I venture to say, with all deference to those whose fine teaching of medicine is secure against outside petty

fault-finding, that instruction in digital percussion still receives in this country less attention than it deserves. My observation leads me to feel sure that the majority of medical students have not learnt to percuss properly. If this is not an error, it is a matter of very far-reaching importance. If I am right, the labour spent in studying this sign, will, if it had had no other result than that of leading to a recognition of this defect, have been labour by no means thrown away.

REFERENCES.

[1] *Brit. M. J.*, 1908, ii. 298.
[2] *Ibid.*, 1913, i. 1152.
[3] *Lancet*, 1914, i. 161.
[4] *Practitioner*, 1914.
[5] *Progressive Spondylotherapy*, 1914, p. 26.
[6] *Med.-Chir. Tr.*, 1904, lxxxvii. 327.

THE SIMULATION OF AORTIC ANEURYSM BY SOME OTHER AORTIC AND CARDIAC DISEASES.[1]

BY

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THERE are two sides to the diagnosis of serious disease; its discovery on the one hand, and its exclusion on the other. Aortic aneurysm, for example, is of such gravity that it ought never to be overlooked; yet it is of some importance that a diagnosis of aneurysm should never be made except when it is actually present, for this diagnosis is tantamount to the dismissal of the patient from active life. There are certain diseases of intrathoracic organs of a much less

[1] Read at a meeting of the Bristol Medico-Chirurgical Society on June 14th.

desperate nature than aneurysm, which may imitate to a certain point the clinical picture of that disease. It is with cardiac and aortic lesions of this type that my paper is specially concerned.

The introduction of skiagraphy has not only afforded a new means for the detection of aneurysm, but also given much new knowledge of *general aortic dilatation*. Many cases of this type were regarded as aneurysm in the pre-skiagraphic days, and no wonder. Two factors are mainly concerned in bringing about diffuse enlargement of the aorta, disease weakening its walls and increased pressure within its lumen. The combination of these two factors in varying proportion is seen in three clinical classes. In the first the patient is suffering from syphilitic aortitis, in itself a pre-aneurysmal state, with or without disease of the aortic valves. The first diagram (Fig. 1) illustrates the physical signs in a woman aged 66, with definite evidence of tertiary syphilis. During the ten years she has been under observation her physical signs have become less obvious, and the X-ray screen fails to discover any sac. The next plate (Fig. 2) shows the enormously dilated aorta, the seat of diffuse syphilitic inflammation, from a man aged 44, who had syphilis at 31. He showed marked signs of aortic regurgitation, with vigorous pulsation in the episternal notch. Absence of pressure signs helped us to exclude aneurysm. The second group of cases

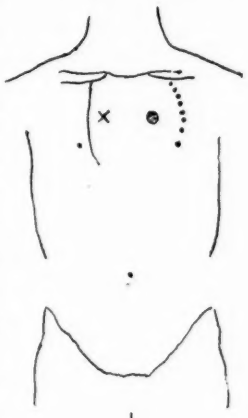

FIG. 1.

⋮ = Area of aortic dulness (leftward border ill defined).

◉ = Maximal intensity of systolic bruit.

× = Area of localised pulsation.

comprises patients with high arterial tension and arterio-sclerosis; these rarely reach such a pitch as to imitate aneurysm, but I include one diagram (Fig. 3) of a woman of 48 recently seen, in whom a loud, deep-toned second sound, a palpable diastolic shock, and an enlargement of some of the superficial cervical veins were associated with a very high

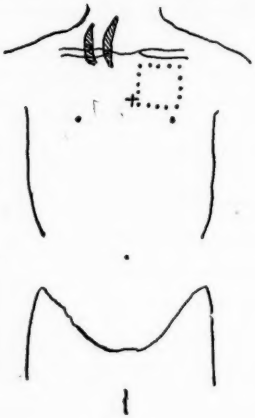

FIG. 3.

= Position of enlarged veins in neck.

= Area of diastolci shock.

+ = Site of maximum accentuation of second sound.

F. 48 with high arterial tension and secondary aortic dilatation.

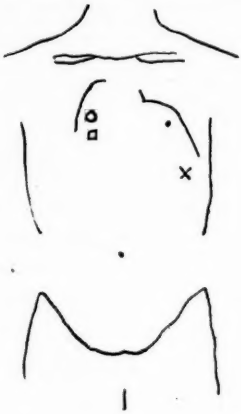

FIG. 4.

= Outline of cardio-aortic dulness.

o = Maximum aortic pulsation.

□ = Maximum diastolic murmur.

× = Maximum ventricular pulsation.

tension but no aneurysm. In the third group may be placed cases of aortic dilatation associated with sclerosis and insufficiency of the aortic valves following rheumatic carditis; these cases have been wrongly described as "rheumatic aneurysms." The accompanying diagram (Fig. 4) portrays the physical signs remarked in a man of 37, who had aortic

regurgitation following rheumatic infection. I have watched him for seven years, and Dr. F. G. Bergin has taken several X-ray pictures of him. These show a diffusely enlarged aorta but no sac. In the syphilitic group, disease of the aortic wall is mainly responsible for the dilatation; in the atheromatous both factors are combined; while in the third group, though rheumatism does some slight injury to the aortic wall, the principal factor is over-distension by the large mass of blood thrown into the aorta at each ventricular systole.

In all these types of aortic dilatation some of the physical signs of aneurysm are produced, as in the cases quoted. On either side of the manubrium there is a strip of dulness extending as far as two fingers' breadth beyond the sternal margin on the right side and rather less on the left. Pulsation is visible at the inner ends of the second and third right intercostal spaces, and is sometimes so distinctly localised as to look expansile, though it is not actually so. The aortic second sound is often so much accentuated, even when it is followed by a diastolic bruit, as to arouse suspicion of the presence of an aneurysm. In a few cases the intercostal veins are a little enlarged in the upper spaces on the left side, and this is apt to lend colour to the diagnosis of aneurysm. And finally, if the aortic valves are incompetent, hæmoptysis may occur.

Pressure signs are also imitated in some instances by *aortitis of localised distribution* implicating branch arteries or neighbouring structures. This point may best be illustrated by the following cases. A man of 48 came on to me from the surgical out-patient department of the Hospital complaining of pain in the chest following strain. I have had many opportunities of seeing him, both as an out-patient and afterwards in the wards. His chief symptoms were pain in the chest on stooping, and curious attacks of loss of power

on exertion (*e.g.* during shaving) in the right arm. This loss of power was brief; it was accompanied by cramp-like contractions of the muscles resulting in involuntary pronation of the forearm and flexion of the fingers, and it was painful. The physical signs were those of aortic regurgitation; over the upper chest a diffuse systolic heave was discernible, and the possibility of an aneurysm being present was further suggested by marked asymmetry of the temporal and carotid pulses as illustrated in the accompanying tracing (Fig. 5), which shows asynchronism in the onset of the two waves. This difference was not discernible in the radial pulses. Skiagraphy demonstrated quite clearly, however, the absence

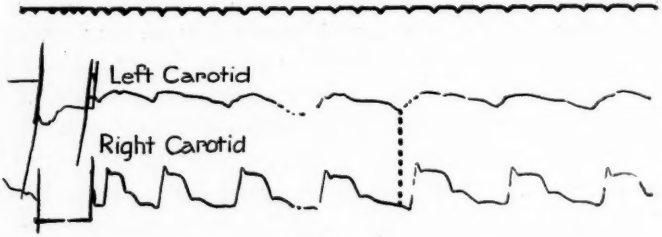

FIG. 5.

of any sign of aneurysmal bulge, and the subsequent course of the case has confirmed this. The explanation of the phenomenon probably lies in implication of the orifices of the arterial trunks springing from the aortic arch in the syphilitic or atheromatous process, leading to their partial obstruction. This was actually found in one of the cases of syphilitic aortitis with unequal pulses, reported by Laignel-Lavastine and Vinlich,[1] and I have several times seen asymmetry of the radial pulses in a similar disease, endarteritis obliterans. Another case of aortitis was that of a man aged 39 who was admitted to Dr. Parker's ward when I was temporarily in charge, on account of dyspnœa

and swelling of the feet of a month's duration, with a fortnight's œdema of the back and chest. There was albumin in the urine; the face and hands were faintly cyanosed, and there was a remarkable pulsatile distension of the veins in the arms and the chest wall. Beyond a diffuse diastolic shock, there were no other distinct signs. Sudden symptoms of embolism of the left brachial artery with those of acute cardiac failure terminated the case. Aneurysm was suspected on account of the venous distension; but skiagraphy excluded this, and the lesion found *post-mortem* was a band of acute aortitis encircling the intrapericardial aorta, and leading to formation of vegetations which projected into its lumen (Fig. 6). Mr. Scott-Williamson, who performed the autopsy, suggested that the œdema and venous distension were due to pressure upon the superior vena cava by the aorta, which must have been distended on the cardiac side of the inflammatory stricture, added to which some weight must be allowed to the extraordinary widening of the tricuspid orifice which was found *post-mortem*.

In cases such as these, and especially where the veins are enlarged and the radial pulses asymmetrical in time or volume, it is often impossible to exclude the presence of aneurysm except by means of skiagraphy. Dr. Bergin and I have examined a number of patients presenting such physical signs, and we find that it is essential to screen the chest from both back and front, and also to look at the aorta in profile, using the right anterior oblique position. In diffuse dilatation the aortic shadow is enlarged in every direction; in aneurysm, a definite localised bulge is seen.

In the other class of case to which attention must be drawn it is not the aorta but the heart itself that furnishes a lesion capable of simulating aneurysm. In a very large number of cases of chronic heart disease it is the left auricle that fails and suffers from the effect of mechanical disability.

Nowhere is this more noteworthy than in chronic rheumatic disease of the heart ; sclerosis of the mitral cusps is a constant feature of such cases, whether accompanied or not by other permanent injuries, and this practically always implies some degree of obstruction to the emptying of the left auricle. The musculature of this chamber, never very powerful, soon permits of dilatation, to which hypertrophy may or may not be added. The consequence is an *enlargement of the left auricle*, so disproportionate that in some of its pressure effects at any rate it may be regarded as a kind of intrathoracic tumour. The best known of these pressure effects is paralysis of the left vocal cord, due to compression of the left recurrent laryngeal nerve. There are about fifty examples of this on record, to which I have to add one and a probable second.

My first patient was a newly-married woman of 27, referred to me at the Hospital by Mr. Lacy Firth, who had discovered the laryngeal palsy and sought for a cause within the chest. She had had chorea several times, between the ages of 9 and 14 ; her dyspnœa, which was quite severe when I first saw her, had increased rapidly of late. The cardiac signs were those of mitral stenosis coupled with great enlargement of the left ventricle, and hyperæmia of the lungs. Under treatment the dyspnœa became less, but the laryngeal symptoms did not alter. Some time later I saw her at her home with Dr. C. M. Phillips of Brislington. She was about five months pregnant, and had become intensely and progressively dyspnœic. We decided that she could not bear any further increase in her abdominal pressure ; she was accordingly taken into hospital and labour was induced by Dr. Roger Wright, who was house physician at the time, Mr. Rayner supervising. This passed off successfully, but she did not improve much, and died at home a few days later of cardiac failure, autopsy being impossible.

The second patient, aged about 45, had been sent to

FIG. 2.

FIG. 6.

Dr. Watson-Williams suffering from hoarseness. He found this to be due to paralysis of the left recurrent laryngeal nerve. and very kindly invited me to see whether any light could be thrown on its cause. Since her teens she had suffered from dyspnœa ; there was no history of any rheumatic manifestation, but she remembered that at 17 she was forbidden to go up hills because of her heart. She had, however, led a very active life, though more and more restricted by dyspnœa. The chief features of the case when I saw her (she had then but lately returned from Nauheim) were dyspnœa and cyanosis, bubbling râles at both bases, great increase in the transverse diameter of the heart, accentuation of the first sound at the apex, preceded by what might possibly be described as a very short presystolic bruit, and increase in the second sound at the base. Her pulse was small but regular ; what added to the possibilities of error was that on the left side she had a very small radial artery and a very large superficialis volæ branch, the result being a false inequality of the radial pulses. The X-ray photographs which Dr. Bergin took proved the absence of aneurysm.

In the first of these two cases there is no doubt whatever that the pressure of an enlarged left auricle was responsible for the laryngeal palsy. The second case is probably susceptible of a similar explanation. The patient had been known to have had cardiac disease at 17, which appears to have been acquired and not congenital if we may judge from the history, and ninety per cent. of all cases of heart disease acquired before 20 are rheumatic in type. Add to this the fact that the physical signs, though not pointing directly to mitral stenosis, proved an enlargement of the heart both to the right and the left—a state of affairs highly characteristic of post-rheumatic disease—and it is difficult to oppose any strong argument to the diagnosis of rheumatic disease of the heart, left auricular enlargement, and compression of the left

recurrent laryngeal nerve. It has of late been suggested that in some of these cases at any rate the recurrent laryngeal nerve becomes implicated in a mediastino-pericardial inflammation, but the weight of *post-mortem* evidence is in favour of the auricular theory. Fetterolf and Norris,[2] indeed, consider from a study of frozen sections that the auricle does not directly compress the nerve, but that it lifts up the left branch of the pulmonary artery in such a way as to nip the nerve between that artery and the aorta. The diagram (Fig. 7) is from one of their photographs of dissections.

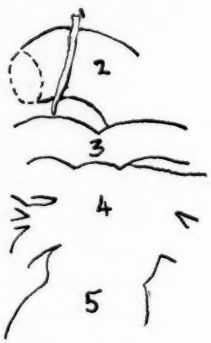

FIG. 7.

DIAGRAM OF RELATION BETWEEN LEFT AURICLE AND LEFT RECURRENT, LARYNGEAL NERVE (after Fetterolf and Norris).

1. Left recurrent laryngeal nerve.
2. Aorta.
3. Pulmonary artery at bifurcation.
4. Left auricle.
5. Left ventricle.

Other pressure effects of the enlarged left auricle are less familiar. Several writers have described inequalities of the radial pulses which they refer to this cause, and others have ascribed evidences of compression of the left bronchus to left auricular pressure. My own experience has included examples of neither of these, with the exception of one doubtful case of radial asymmetry; but I have under observation at the present time a man with mitral stenosis and auricular fibrillation of some years' duration, whose left pupil is persistently smaller than the right, and by a good deal. It is possible in the screen to see that the auricle is enlarged in a backward direction. Moreover, he complains of a choking sensation at the root of the neck on exertion, a

symptom by no means uncommon in mitral stenosis. In one case, that of a girl with mitral disease and great cardiac enlargement, actual dysphagia was complained of. Dr. Bergin and I examined this latter patient with the screen, and we found three facts of interest. First, the auricle was enlarged and projected backwards in such a way that it could scarcely fail to compress the œsophagus (Fig. 8). Second, at this point the stream of bismuth down the œsophagus was distinctly diverted towards the right. Third, it was delayed

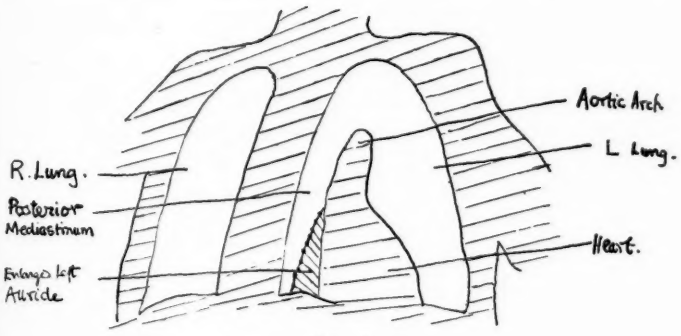

FIG. 8.

Appearances seen with fluorescent screen. (Patient in right anterior oblique position.) After Holzknecht.

at the level of the cricoid cartilage. I do not attempt to explain the connection between these phenomena, but they do at least suggest that mitral stenosis may be a cause of dysphagia, and that this adds to the possibility of erroneous diagnosis of aneurysm in such cases.

Finally, the *conus arteriosus of the right ventricle* may become so hypertrophied in mitral stenosis that its pulsation may simulate that of an aneurysm. In a man of middle age whom I saw several times with mitral stenosis and total arrhythmia, there was a very definite area of strong

ventricular-timed pulsation (Fig. 9) in the third left interspace—so strong and well-defined that it seemed too much to ascribe to the ordinary cause of pulsation at that spot, namely, hypertrophy of the conus arteriosus dexter—and the possibility of an aneurysm being present was several times considered. In one case of aneurysm springing from a sinus of Valsalva, the pulsation of the sac was easily visible in this very same area. However, we were unable to find any confirmatory evidence of aneurysm in the man with mitral stenosis by the ordinary methods or with the X-rays, and after his death in another town I heard from the pathologist

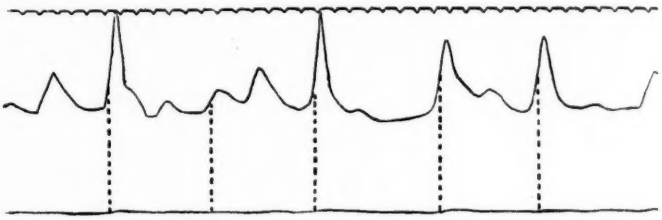

FIG. 9.

who made the *post-mortem* examination that there was no aneurysm.

To summarise. The clinical picture which is familiarly associated with aortic aneurysm may be imitated not only by that of mediastinal growth and inflammation, but also by simple dilatation of the aorta and by chronic rheumatic disease of the heart. In the former type of the disease the direct physical signs of aneurysm are imitated, in the latter an enlarged auricle may produce some of its pressure effects.

DISCUSSION.

The above paper was discussed at the meeting of the Bristol Medico-Chirurgical Society on January 14th.—Dr. MICHELL CLARKE stated that syphilitic aortitis itself was sufficient to cause aneurysm without the blood pressure

being raised. He had seen many cases with normal blood pressure. But increased pressure was of importance in cases of dilated aorta as distinguished from aneurysm. It was remarkable how great the dilatation of the conus arteriosus might be in cases of mitral and tricuspid stenosis. The pulsations could be detected to the left of the sternum. A sign of dilatation of the left auricle was sometimes dulness in the left interscapular space.—Dr. NIXON said he had seen two autopsies on patients who had practical obliteration of the carotid and subclavian arteries at their origin from the aorta. One of the patients had a radial pulse which was difficult to explain.—The PRESIDENT alluded to the value of paralysis of the left recurrent laryngeal nerve as a symptom of aneurysm in the absence of other pathological conditions in the neck. Many cases of aneurysm had been correctly diagnosed largely on the basis of this sign. He looked upon paralysis of the recurrent laryngeal, together with œsophageal obstruction as strong evidence of œsophageal new growth.—Dr. COOMBS could not confirm the value of percussion in the detection of a dilated left auricle from behind. It was very difficult to explain the various disturbances of sensation from aneurysm.

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[1] *Presse Méd.* 1913, p. 607.
[2] *Am. J. Med. Sc.*, 1911, cxli. 625.

FIBROID UTERUS.

BY

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IT is not possible in surgery to point with greater triumph to any operation than intra-peritoneal hysterectomy, when one thinks that only so lately as 1896 the operation was performed by very few surgeons on account of its very high mortality, but from 1896 to 1906 it came down to 2 per cent.

After many journeys to London and watching the operation most carefully, I undertook the first in Bristol at

the General Hospital in 1898. It was quite successful, and I brought the case forward at a meeting of the Bristol Medico-Chirurgical Society; but the operation was criticised by those who preferred to keep to the old operation of transfixing the stump outside the wound by means of the serre-nœud, and allowing the last piece of the uterus to slough off by a daily tightening of the surrounding wire. Of course, in many of these cases suppuration followed, and the patient's life was in jeopardy, and I ventured to predict that this, the extra-peritoneal procedure, must become obsolete, and that the then new intra-peritoneal operation for all fibroids was the treatment that had come to stay.

In 1906 there were 348 hysterectomies recorded in London, with eleven deaths, while in 1906–7 Bland Sutton did 101 cases without a single death.

It will thus be seen that removal of the uterus for fibroids by the abdominal route intra-peritoneally is a fairly safe proceeding; nevertheless hysterectomy, like all other major surgical operations, is attended with considerable risk, and should only be undertaken by those who have had opportunities for gaining adequate experience and practice.

Baer's method of supra-vaginal hysterectomy is far the safer and easier operation, but some surgeons prefer the total on account of the idea that possibly cancer may occur in the vaginal stump. If this ever should occur, it would probably be found that cancer was present in the neck of the uterus at the time of the operation, or that the tumour removed for fibroid was really sarcomatous or malignant. The strongest advocates of total hysterectomy for fibroids are probably those who have had but a limited experience of the total operation. I have not yet seen in my large number of cases any sign of malignancy in any operation that I have undertaken for fibroids.

It is generally admitted now that it is better if possible

to preserve both ovaries or at least one in doing this operation, and not remove them as Baer originally did.

The advantages of leaving them are many, but the most important is that it prevents the severity of an artificial menopause.

In regard to marital relations, I have had many proofs that the preservation of one or both ovaries promotes domestic bliss. Also many spinsters have married after this operation, and yet have been able to lead perfectly happy lives from their own point of view and also that of their husbands.

The belief that fibroids disappear at the menopause is now, I think, quite abandoned; my own experience would tell me that if anything they have a tendency to grow rather faster after it than before, and many patients that I saw ten or twelve years ago, and on whom I did not urge an operation, have come to me with such large tumours that the abdominal cavity is quite filled with the growth.

A fibroid lodged in a pregnant uterus is very liable to undergo red degeneration and become very painful, whereas ordinary fibroids are not usually associated with any pain.

I have been compelled to do two myomectomies for red degeneration of a fibroid in a pregnant uterus on account of the excessive pain. On each occasion I was able to shell out the tumour without affecting the uterus, and pregnancy was successfully continued up to the ninth month in each case.

Like all big operations connected with the reproductive organs, hysterectomy for fibroids has had to pass through a period of prejudice. At the present time no major operation can show such a low mortality or produce such permanent good effects.

A wife spending half her life as a chronic invalid, in bed

half the month with hemorrhage, only able to get about the other half in a wheel-chair, is able now to become a companion to her husband, while a spinster may be enabled to earn her own living instead of being a helpless invalid. Such is the success of this operation, that I am inclined to lay down the law and say, "No matter how small the fibroid may be, when you have once found it, it is better to advise the patient to have it removed." There is then no risk of complications, or of being blamed afterwards for not giving this advice if any accident happens. It must be remembered that though it is possible for a woman to have a fibroid and be unconscious of the fact, still in the majority of cases they are the cause of much suffering and may cause death in insidious ways.

Hemorrhage, of course, is one of the chief symptoms, and we must remember that if a woman bleeds excessively at the periods and also between them, it is quite likely that the tumour has become septic, and if this is allowed to continue for any length of time it will surely destroy the life of its owner.

Pyosalpinx may often be found as a complication of uterine fibroids when they have been left to become septic, and I have operated upon four cases with this complication, luckily with good results in all of them.

When a fibroid occupies the posterior wall of the uterus it often causes retroflexion of the body and fills up the pelvis, and often I have found some difficulty in pulling up the tumour owing to this complication. When a woman complains of retention of urine for a few days before the menstrual period at the ages of 35 to 45, then look out for a fibroid in the uterus.

I find that on looking through my book I have operated on a series of 119 fibroids with only one death.

HYPERPIESIS AND ARTERIO-SCLEROSIS.

BY

C. W. J. BRASHER, M.D.

THE present position of our knowledge of high blood-pressure reveals a want of harmony between the views of the large number of physicians in Europe and America who have directed their attention to this subject.

Much has been written, especially by the American school, which does not find acceptance among the majority of English observers. It may be that the attitude of the latter is too conservative, but they have learned from past experience that the dogmatism of the enthusiast has often retarded true progress.

It is generally admitted that systematic observations of blood-pressure will aid diagnosis and treatment in a number of diseases, but before real progress can be made it would appear to be necessary that two matters of fundamental importance should be settled: (1) The standardisation of the most accurate and reliable instrument or instruments, and (2) the acceptance of a common nomenclature for the various phenomena.

The Standardisation of Instruments.—There are at least three types of instruments in common use, mercurial, aneroid and "pressure-gauge."

Although the mercurial instruments are more generally employed, only one of these (French's) is guaranteed to be standardised, and it has been found that the different types often give widely-different readings. It is obvious that careful standardisation of all instruments should be carried out by the makers, and the most reliable type of instrument

should be ascertained. It is necessary that the sphygmomanometer should be as accurate as the clinical thermometer, otherwise a large number of observations will be of doubtful value.

In 1913 the writer experimented with several types of aneroid and pressure-gauge instruments, and compared the results with those obtained with French's mercurial sphygmomanometer. He found that the only pressure-gauge instrument giving precisely similar readings at all pressures to those of the mercurial instrument was Hill and Barnard's.

The "Tycos," an American instrument, appeared to be accurate at low and medium pressures, but above 180 mm. there was an error of 20 to 30 mm. Several observers have found that Pachon's sphygmo-oscillometer gives readings about 20 mm. above those of mercurial instruments.[1] Little progress will be made until these errors have been corrected.

Another matter is of even greater importance. Auscultation had been practised in a tentative and uncertain manner by many physicians in the latter part of the eighteenth century. Then came Laennec, who, struggling against ill-health, and in spite of opposition and incredulity of jealous rivals, gave to the world a system of auscultation and a nomenclature that has survived almost unaltered to the twentieth century. As yet no second Laennec has appeared to perform a similar service for sphygmomanometry, and assign its rightful position in scientific medicine.

The absence of any universally-accepted nomenclature has led to much uncertainty, many new terms have been introduced, but they are frequently used in a different sense by various writers. The exact value of pressures other than systolic has not been satisfactorily determined. The majority of English observers consider that the systolic

pressure only is of practical value at the present time, but the American writers believe that the diastolic pressure is easily estimated and is of almost equal importance.

As an instance of the laxity with which many terms have been used, some writers appear to think that " high blood-pressure " and " arterio-sclerosis " are synonymous, and if the pulse is described as " excessively hard," and the sphygmomanometer shows a systolic blood-pressure greatly in excess of that which is considered normal for the patient's age and sex, a diagnosis of arterio-sclerosis is made regardless of the condition of the arterial wall. As Herbert French says, " Merely finding a systolic blood-pressure of 150 or 160 mm. Hg. is no proof of granular kidney or of arterio-sclerosis." [2]

It is necessary to remember that in a number of cases a high blood-pressure may exist for a considerable period, probably for years, before definite changes occur in the arterial walls. To this condition Allbutt has applied the term " hyperpiesis."

The recognition of this fact is a point of the utmost importance, as should we be fortunate enough in seeing the patient before definite thickening and degeneration of the arteries have occurred, much may be done to relieve the pressure upon the heart and kidneys, and to restore the patient to comparative if not to perfect health ; on the other hand, if this high blood-pressure persist it will result eventually in hypertrophy and dilatation of the left ventricle, followed by chronic interstitial nephritis and the typical changes in the arterial system.

Some have written of arterio-sclerosis as though it were a disease, a distinct pathological entity, and not merely a symptom of some underlying disease which produces many others, such as vertigo, tinnitus, headache and palpitation. The physician's aim should be to ascertain as far as possible

the nature of the underlying condition that produces this train of symptoms.

Hyperpiesis is found in many conditions, sometimes in young adults, but there can be little doubt that if the cause be not removed this functional condition may terminate in the definite pathological lesions of arterio-sclerosis.

Probably the most familiar example of hyperpiesis is found in chlorosis. It has been known for many years that a number of chlorotic girls have a systolic blood-pressure considerably higher than normal, and that this produces dilatation of the left side of the heart. Some have supposed that this was due to an actual plethora or " hydræmia," an hypothesis incapable of actual proof ; it seems much more probable that it is due to alimentary toxæmia, or as Andrew Clark termed it, " copræmia." This writer emphasised the great value of saline aperients in chlorosis. These patients have frequently very carious septic teeth, pyorrhœa, chronic gastritis and obstinate constipation, with an excess of B. coli in the fæces. Nothing can be more rational than their treatment by saline aperients, which remove large numbers of putrefactive organisms and their products. The result is that the hard, wiry pulse quickly becomes soft and the blood-pressure falls to normal.

It is probable that alimentary toxæmia is the underlying cause of many other cases of hyperpiesis in young or middle-aged adults who are not obviously chlorotic.

Turning now to arterio-sclerosis, the most common causes of this condition are :—

1. Chronic intoxications, alcohol, lead, gout, rheumatism, syphilis.

2. Chronic dyspepsia and constipation, producing alimentary toxæmia, excessive consumption of tobacco, tea, coffee and meat.

3. Sedentary occupations.

4. Prolonged mental or physical strain.

5. Heart disease and chronic nephritis not due to any of the above causes.

Clinical experience shows how frequently are several of these conditions associated. For example, a house painter, aged 48, suffering from chronic plumbism, had excessively thick and tortuous radial arteries. His systolic blood-pressure never fell below 230 mm. Hg. He was a heavy smoker and drinker, and had had syphilis at the age of 20. His teeth were in a most septic state, and he suffered from chronic constipation. The chest was emphysematous, and consequently the cardiac dulness could not be ascertained, but the impulse was very diffuse and "heaving." There was a loud aortic diastolic murmur (probably due to syphilitic aortitis). The urine was of low sp. gr., contained a few casts and a large trace of albumin. In such a case it is difficult to determine the actual cause of the arterio-sclerosis.

Again, many men in middle life, whose occupations are sedentary, eat too much meat, and stimulate their flagging energies with large quantities of alcohol and tobacco. They suffer from chronic constipation, and are often "martyrs to gout."

The frequency of the occurrence of arterio-sclerosis in such individuals is so generally recognised in the United States, that the leading Life Assurance Companies of America require the estimation of the blood-pressure in all cases where the applicant is over 40 years of age.

Arterio-sclerosis occasionally occurs in patients (more frequently women) in early middle life who have never suffered from any serious illness, but who have a "rheumatic" family history, and who have only slight evidence of arthritic changes.

The following cases illustrate this.

Case 1.—Miss A. M. H., a school teacher, aged 39, is a life-long total abstainer. Her brother died of cerebral hemorrhage at the age of 38. Two years ago the patient complained of shortness of breath and palpitation. The interphalangeal joints of the fingers have been slightly enlarged for years. The teeth are very good. The pulse was very hard, and the superficial arteries were tortuous and thickened. There was no albuminuria or casts. At the present time she has a systolic blood-pressure of 200 to 210 mm. Hg., and chronic interstitial nephritis.

Case 2.—Mrs. E. C., aged 40. Has had three children. She is a very active, energetic woman, who seldom takes any alcohol. Has suffered occasionally from muscular rheumatism, and the interphalangeal joints are slightly enlarged. The mouth is healthy, and she has had very little dyspepsia. No history of constipation. She has severe migraine every few weeks. The urine is normal. She suffers from menorrhagia, and her systolic blood-pressure is seldom below 200 mm. Hg. The radial arteries are very thickened and moderately tortuous.

In addition to "rheumatism," both these patients have had much family trouble, and are of an anxious temperament.

Some families "age prematurely." They are not so well fitted to withstand the stress of modern civilised life as are others of tougher fibre. Many of these persons have prematurely white hair, presbyopia, and other signs of senile degeneration, and although they have avoided errors and excess, arterio-sclerosis often occurs in such cases in early middle life.

Treatment.—The causes of high blood-pressure are so diverse and complex, and in many cases have produced such an amount of degeneration of various organs, that the damage is beyond repair, and even our attempts to prevent further arterial degeneration meet with little success. Hence many writers regard endeavours to lower the blood-pressure

as likely to result in failure, and they suggest that, did we succeed, the last state of the patient would be worse than the first, because the organs, especially the brain and heart, have been gradually accustomed to working under a greatly augmented blood-pressure, and these authors predict disaster if that pressure be lowered.

The success of treatment of high blood-pressure depends largely upon the condition of the arterial walls, *i.e.* whether the condition is one of hyperpiesis or arterio-sclerosis; if there be little or no evidence of the latter condition, much may be done in many cases to lower the blood-pressure by elimination of the toxic substances and by regulation of the patient's mode of life, and even in those cases where arterio-sclerosis is present, the patient's life may be prolonged by following Osler's advice, "to open the sluices of the irrigation fields," and "to reduce the speed of the *Mauretania* to that of a ten-knot tramp."

As we have seen, alimentary toxæmia in one form or another plays a most important part in the production of high blood-pressure, and can we but find a suitable intestinal antiseptic, the high blood-pressure when due to septic absorption may be lowered permanently in some cases to a surprising extent.

In an important paper on "Intestinal Disinfection in Alimentary Toxæmia," Frank E. Taylor[3] gives the formulæ of the various amino-acids and toxic amines which have been isolated by Abelous, Dixon and Taylor, and Barger and Walpole. He shows that two of the common products of proteid putrefaction, iso-amylamine and tyramine, are "pressor substances," which possess a markedly similar physiological action to adrenalin.

These investigators have shown that the evolution of a large amount of gas in intestinal putrefaction is due to the decarboxylation of amino-acids, the separation of a molecule

of CO_2 from the amino-acid reducing it to the corresponding toxic amine.

Hitherto the results of the administration of intestinal antiseptics have been disappointing; camphor, naphthalin, β. naphthol, salol, creasote and phenol, have failed to reduce the number of putrefactive bacteria in the majority of cases in which they have been administered.

Taylor and Hewlett,[4] of King's College, have carried out an important research with "kerol," a coal-tar product which is emulsified with a neutral soap. They state that it has a high carbolic acid coefficient, and is of low toxicity, and that it contains a diphenyl nucleus (thus distinguishing it from phenol). In two normal individuals they found that the number of B. coli in the fæces averaged about ten million per gramme. To one, 10 grains of salol were given thrice daily, and to the other, three, and afterwards six (3 minim) capsules of kerol.

The individual taking salol continued to excrete an undiminished number of B. coli, whilst he who took kerol only excreted 10,000 per gramme, *i.e.* the B. coli content was reduced to $\frac{1}{10000}$ of the former quantity.

"These results were obtained upon healthy individuals eating a normal amount of food. The same results would doubtless be obtained with smaller doses in invalids on smaller and more restricted diets.

"In conclusion, the weight of evidence, both bacteriological and clinical, abundantly proves that the administration of a suitable disinfectant in efficient doses markedly diminishes the production of these substances of bacterial origin, the absorption of which into the blood stream gives rise to the protean manifestations of alimentary toxæmia, and that we now have at hand a ready means of keeping these manifestations in check."

The following case proves this.

Mrs. R. D., aged 83, complained of dimness of sight, vertigo, insomnia, palpitation and frequent "fainting attacks." Patient is thin and fragile-looking. She has never been robust, but has always suffered from dyspepsia and flatulence. She has had no serious illness except "rheumatic gout." Both hands show old typical symmetrical deformities of osteo-arthritis. The patient had lost all her teeth many years ago, and wore a complete artificial set. The mouth was quite healthy. The heart was slightly dilated, and the second sound accentuated. The urine was normal.

When first seen in Oct. 1911, the systolic blood-pressure was 260 mm. Hg., and the pulse rate 96. The patient was kept in bed for several weeks, and prolonged trial of various vasodilators was made, erythrol tetranitrate being the most effectual, but none of these drugs prevented frequent attacks of palpitation and faintness.

On June 21st, 1912, kerol (intestinal) capsules were prescribed, one thrice daily, and in two days the blood-pressure fell from 200 to 140 mm. Hg., and never rose again above 148 mm. The patient made a fairly rapid recovery, and required no further treatment until December, 1913, when she had a return of dyspepsia and flatulence. The blood-pressure before any treatment was commenced was 145 mm. Hg. After the acute symptoms had subsided, kerol was again prescribed, and the patient quickly recovered. Her general health is now better than it has been for years. During the whole time that kerol was being taken there were no toxic symptoms.

This case shows that a very high blood-pressure may exist in an aged patient without producing arterio-sclerosis, that the blood-pressure may be reduced to normal, and that the reduction will persist for eighteen months with great benefit to the patient, and without any of the evil consequences that have been anticipated by some writers.[5]

One other point may be mentioned. Many of these cases of high blood-pressure suffer from symptoms of cardiac failure, with or without valvular disease. Should digitalis be prescribed? Many writers, relying upon the results of

laboratory experiments, consider that it should not be given on account of the rapid rise of blood-pressure which it produces in animals when given in large doses. Frederick W. Price [6] has published two papers in the *British Medical Journal* in 1912 and 1913, in which he shows that this rise does not occur in man when digitalis is prescribed in ordinary doses in heart disease. The writer has had several cases of mitral regurgitation, with high blood-pressure, in which the blood-pressure has fallen 20 to 30 mm. during and after the administration of digitalis, and in no case was there any rise in blood-pressure.

This is a point of great clinical importance, but it cannot be discussed adequately here. All that is desired is to suggest that the therapeutics of digitalis require revision from the clinical standpoint, and it may be found that, contrary to accepted views, digitalis or its active principles may be of great service in certain cases of heart failure accompanied by high blood-pressure.

The whole subject of high blood-pressure is so wide that it is impossible to compress it within the limits of a single paper. Charts illustrating several of the cases to which allusion has been made are appended.

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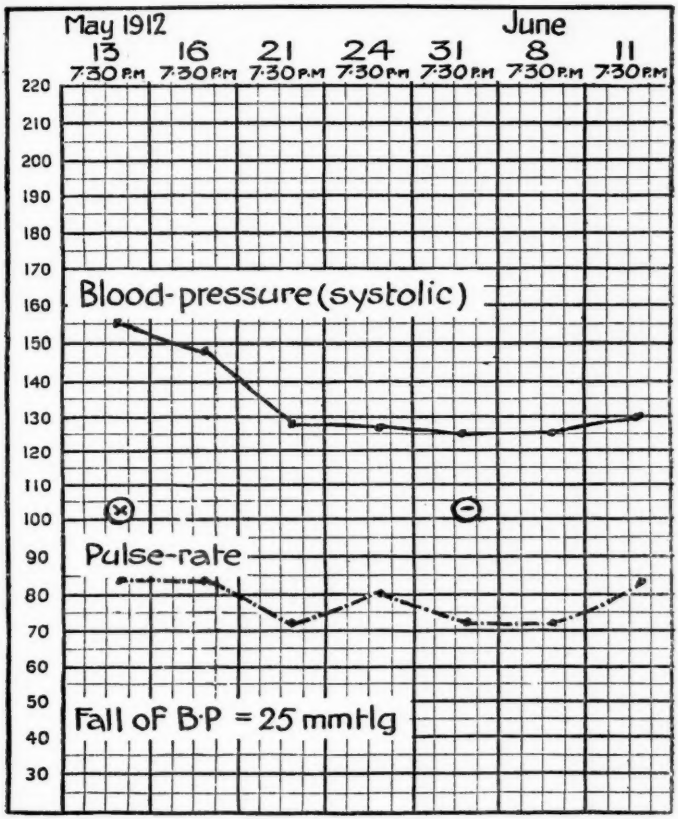
[1] Carey Coombs, *Med. Annual*, 1912, p. 174.
[2] *Index of Differential Diagnosis*, p. 18.
[3] *Med. Press and Circ.*, 1914, cxlviii. 33.
[4] *Ibid.* and *Med. Times*, June 28th, 1908.
[5] *Vide* Goodhart, *Practitioner*, 1913, xc. 786.
[6] *Brit. M. J.*, 1912, ii. 689; 1913, i. 477.



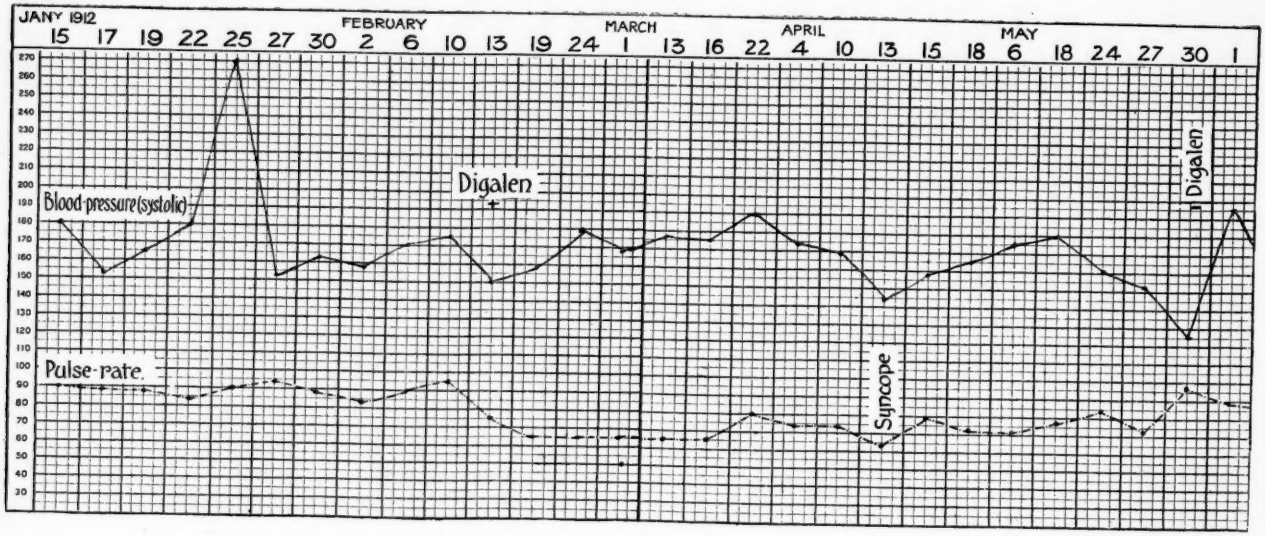
NAME.—Arthur M., tax collector.

AGE.—38.

DISEASE.—Chronic mitral regurgitation, dilatation.

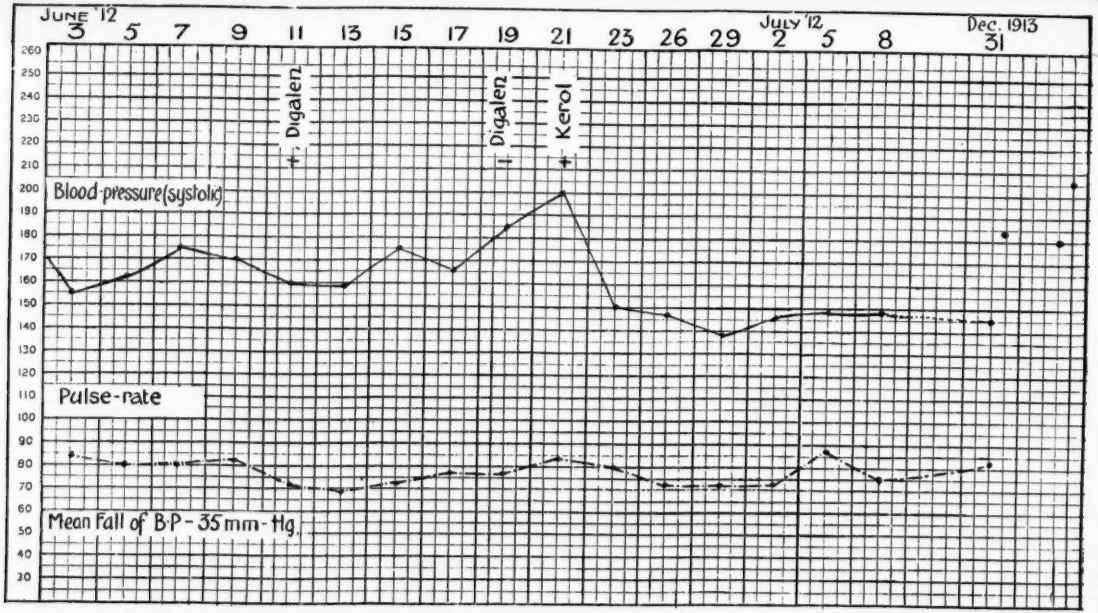
NOTES.—May 13th, 1912: C.O., dyspnœa, palpitation, pain in cardiac region, slight vertigo, Ap.B. diffuse, A.C.D. +, loud rasping apical systolic murmurs. Standardised Tr. Digitalis ♏ xii c.s. t.d.s. from May 13th to 31st. Patient followed usual occupation during treatment, except that he had a holiday for one week (May 24th to 30th). May 31st: All subjective symptoms had disappeared. Ap.B. in normal position, systolic murmur very faint and not conducted outwards. Patient "feels better than he has felt for years."

⊗ = Digitalis. ⊖ = Digitalis stopped.

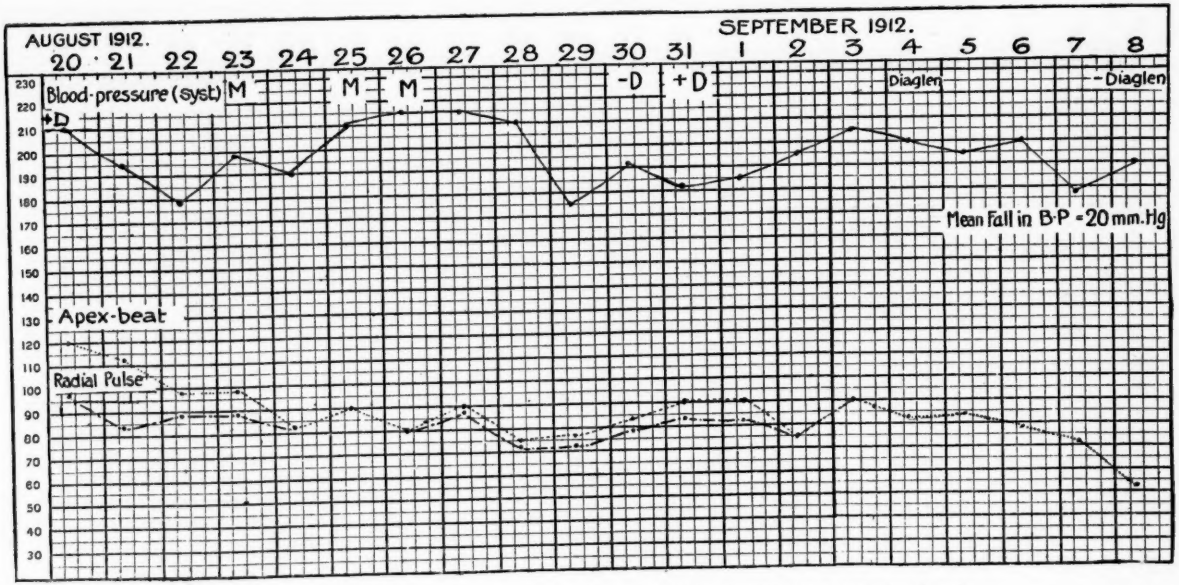


[*Chart continued on opposite page.*

NAME.—Mrs. R. D. AGE.—83. DISEASE.—Alimentary toxæmia, heart failure, hyperpiesis.



NOTES.—Trinitrin, sodium nitrite, crythrol tetranitrate, all given from January 12th to February 13th. Digalen then prescribed, no vasodilators given subsequently. Blood-pressure taken on each day at 10 a.m. Digalen administration continued until May 30th.



NAME.—Edmund C. AGE.—70. DISEASE.—Mitral regurgitation, heart failure, arterio-sclerosis.

NOTES.—Acute cardiac and epigastric pain, bronchitis and venous hæmoptysis. Urine: scanty; albumin=.01 per cent. No œdema, no ascites, great dyspnœa. Cheyne-Stokes respiration from August 20th to 25th.

+D = Tr. Digitalis (standardised) ♏ xv t.d.s. −D = do. do. discontinued. Digalen ♏ x t.d.s. September 4th to 8th.

M = Morphine sulphate gr. ¼ by mouth.

Mean fall of blood-pressure under digitalis medication = 20 mm. Hg.

NOTES ON THE ELECTRICAL REACTIONS IN FACIAL PARALYSIS, ESPECIALLY IN REFERENCE TO THE PROGNOSIS IN POST-OPERATIVE CASES.

BY

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IN recording these investigations on the electrical reactions in facial paralysis I do not claim originality, the main facts being stated by Sherren[1] in reference to paralysis of any motor nerve; but the point seems to have been overlooked completely by aurists, no mention being made of it in the works on otology, and the reactions generally, as far as my experience goes, are not included in the customary clinical investigations of such cases. Hence their consideration may be of some interest.

To the aural surgeon the practical value of these peculiar reactions to electrical stimulation lies in the fact that, on about the tenth day following the injury or appearance of symptoms, by carefully testing the reactions, a definite prognosis as to recovery or otherwise (*i.e.* apart from operation) may be made. There are a few exceptions to this statement which will be referred to.

The conclusions arrived at from testing on the tenth day may be briefly stated thus:—

Loss to Faradism, with reaction of degeneration.—Recovery, apart from operation very rare.

Loss to Faradism, with the modified reaction of incomplete division.—Slow recovery may be foretold.

Loss of voluntary power, with retained power of contraction to Faradism.—Rapid recovery.

[1] *Injuries of Nerves and their Treatment*, London, 1908.

M = Morphine sulphate gr. ¼ hypo under digitalis medication = 20 mm. Hg.
Mean fall of blood-pressure under digitalis medication = 20 mm. Hg.

The injury to a nerve may involve complete or incomplete division, the term "division" being used in reference to the conducting portion of the nerve. Incomplete division represents those cases with interruption or impairment of conductivity which do not lead to degeneration of the whole of the peripheral end of the affected nerve, while from a complete division total degeneration results.

The sub-grouping into anatomical and physiological varieties of complete and incomplete division is incapable of verification apart from inspection of the nerve at the site of injury.

A nerve may be incompletely severed, by a sharp cutting instrument, up to a third of its sectional area being divided, without producing any change, motor or sensory, or one of a transient nature only. This fact is of importance in the operation of nerve anastomosis.

The reactions which I refer to are the following :—

In cases of complete as compared with those of incomplete division.

A.—Stimulation with the Faradic current.

Complete division. No response.

Incomplete division. No response, except in the mildest cases, which retain their excitability to this form of stimulation.

Sherren states that rarely the muscles retain the power of voluntary contraction, although contraction to Faradic stimulation is absent, seen in cases of crutch and sleep palsies.

B.—Stimulation with the constant current.

Complete division. Slow, sluggish contraction.

Polar reversal ACC > KCC.

The contraction is difficult to elicit and requires a stronger current than on the normal side.

Incomplete division.—The contraction is sharp and brisk, as compared with that seen when the reaction of degeneration is present, but in my experience slightly more sluggish than that on the normal side.

A contraction is elicited by a weaker current than on the sound side. No polar reversal is present, KCC>ACC.

In other words, in complete division the reaction of degeneration is obtained, in incomplete an easily recognised variation is observed. The interval of ten days (strictly 8—14) is allowed for the development of these reactions.

Recovery of function in a nerve which gives the reaction of degeneration apart from operative treatment is very rare, but in the so-called cases of idiopathic facial paralysis it is justifiable to wait six months. When once the muscles cease to respond to galvanic stimulation operative treatment is useless. Before this occurs, however, years may have elapsed, thus frequent and careful testing should be made before hope is abandoned. Sherren refers to a case recorded by Purves Stewart where the muscles responded to the constant current sixteen years after the division of the nerve, and to another case of his own twenty-three years after the division of the musculo-spiral nerve.

The explanation of the reactions of incomplete division depends on the alteration in conductivity of the nerve, and the increased excitability of the motor end-plates. Hence the Faradic current, which is a stimulant of nerve fibre, loses in all except the mildest cases its power of producing a contraction, while the constant current stimulating the hyper-irritable end-plates, and not as in " R. D." the muscle fibres direct, produces a contraction with a weaker current than on the normal side, and one which is sharp and brisk when compared with that of " R. D.," which travels

wavelike from bundle to bundle of fibres, starting from the point of stimulation.

My investigations to verify Sherren's statements have been carried out on cases of facial paresis supervening after the radical mastoid operation, and consequently, I cannot say unfortunately, they have not been very extensive. But in my opinion sufficient evidence of accuracy has been obtained.

It is my experience that the slightest facial twitch noticed during the performance of the operation results in an initial incomplete facial paresis (as regards the full muscular distribution of the nerve), rapidly proceeding to a complete paresis (in the same sense), which, however, in the majority of cases, on testing later, is found to be due to an incomplete division of the nerve, terminating in recovery.

With regard to treatment of these cases of incomplete division, massage stands first in importance, maintaining as it does the nutrition of the unexercised muscles. As an aid to this, artificial exercise of the muscles by means of electric stimulation is an adjunct, though its use is disputed by some. It is evident that the constant current is the one to be used, as at all events in the earlier stages the Faradic is incapable of producing a contraction, and later voluntary incipient movements are preferable to artificial stimulation. The strength of current used should be the weakest capable of producing a contraction.

The exceptions to which I referred are the following :—

1. In certain cases incomplete may pass on into complete division at a later period, as a result of compression by fibrous tissue. This indicates the importance of watching the case and taking the reactions from time to time.

2. Progressive cases due to neoplastic or inflammatory causes. Here the possibility of removal in the case of the

former, or subsidence through surgical procedure in the latter, will determine the prognosis.

In the case of incomplete division the first sign of recovery is a return of voluntary power, and this is followed by excitability to Faradic stimulation. The former usually precedes the latter, often by some weeks. The muscles nearest the seat of injury are the first to show signs of recovery.

At the time when response to Faradism is regained, it is my experience that on stimulating these muscles with the galvanic current a stronger current is required to elicit a contraction than on the sound side.

I have seen one case of incomplete division which retained the power of responding to Faradic stimulation; in this instance also more milliamperage was required on the affected than on the sound side. This was one of those cases which recover rapidly.

The explanation may be that complete interruption of conductivity of the nerve fibres leads to hyper-irritability of the end-plates, impairment to a hypo-irritable state.

Theoretically it might be said that in the intact nerve the fibres convey an inhibitory influence to the end-plates. The injury acts as a stimulant to this influence, but in most cases, owing to the complete interruption of conductivity, it cannot exert its power, and so hyper-irritability is the result. However, as the nerve recovers and conductivity is re-established, or where the interruption is incomplete in the first instance, this inhibitory stimulus passes down and a hypo-irritable state of the end-plates ensues.

With regard to the times of recovery in incomplete division :—

A.—In those cases which retain Faradic excitability recovery begins in two to four weeks, and proceeds rapidly. The symptoms usually appear two or three days after the operation.

B.—In those cases which show the typical reactions of incomplete division. Recovery begins in two to nine months, and proceeds slowly. It is these cases which rarely may later develop the reactions of complete division.

I now append brief notes of a few cases.

Case 1.—L. S., female, age 20.

June 18th, 1913.—Left radical mastoid operation and bad facial twitch noticed during operation.

Practically complete facial paralysis the same evening.

June 25th.—Facial paralysis complete.

June 30th.—Electrical reactions.

	Galvanism.	*Faradism.*
R.	KCC>ACC.	Response.
L.	KCC>ACC.	No response.

A contraction was obtained with a weaker current on the affected than on the sound side. And the contraction, although not quite so brisk as on the sound side, was not slow and sluggish as that of R. D. Unfortunately the milliamperage was not noted.

Note.—On the following day and subsequently (July 9th) a stronger constant current was required on the affected than on the sound side before a contraction was elicited. No polar reversal was seen on these occasions.

This presumably was during the hypo-irritable recovery phase.

Galvanism.

R. KCC > ACC (4.5 ma.: 11 ma.).

L. KCC > ACC (8 ma.: 15 ma.).

July 10th, 1913.—Slight voluntary movement in upper eyelid.

Feb. 9th, 1914.—Facial paralysis, not completely recovered, but improving steadily.

	Galvanism.	*Faradism.*
R.	KCC > ACC (1.2 ma.: 1.4 ma.).	Response.
L.	KCC > ACC (2.2 ma.: 2.6 ma.).	Response, but stronger current required.

Also a hypo-irritable recovery phase.

Case 2.—E. R., female, age 47.

June 25th, 1913.—Left radical mastoid operation.

June 27th.—Slight facial paralysis.

July 8th.—Facial paralysis complete (gradually increased between these dates).

July 9th.—Electrical reactions.

	Galvanism.	*Faradism.*
R.	KCC > ACC (2 ma.: 2.2 ma.).	Response.
L.	KCC > ACC (4.5 ma.: 4.7 ma.).	Diminished response.

This case showed decreased irritability to galvanism on the affected side, and to elicit a contraction a stronger current was required on the affected than on the sound side.

This was a hypo-irritable state due to an initial incomplete interruption of conductivity of the nerve fibres.

July 28th.—Facial paralysis almost gone.

Case 3.—E. H., female, age 19.

August 13th, 1913.—Left radical mastoid operation. Slight facial twitch during the operation; no facial paralysis noticed the same evening.

August 14th.—Slight facial paralysis, which was seen to be increasing at an evening examination.

August 26th.—Facial paralysis complete.

September 8th.—Electrical reactions.

	Galvanism.	*Faradism.*
R.	KCC > ACC (6.5 ma. : 7.5 ma.).	Response.
L.	KCC > ACC (2 ma. : 2.5 ma.).	No response.

Contraction on injured side sharp and brisk, as compared with the sluggish response of R. D.

February 9th, 1914.—Facial paralysis practically undetectable.

	Galvanism.	*Faradism.*
R.	KCC > ACC (1 ma. : 2 ma.).	Response.
L.	KCC > ACC (2.2 ma. : 3.5 ma.).	Response, but requires a stronger current.

In the testing of February 9th there was decreased irritability to galvanism on the affected side ; a stronger current was required on the affected than on the normal side to produce a contraction.

This was also a hypo-irritable recovery phase.

Case 4.—H. R., male, aged 31.

December 23rd, 1913.—Right radical mastoid operation, no facial paresis noticed in the evening.

December 24th.—Paresis of upper and lower parts of right side of face.

January 5th, 1914.—No reaction to faradism.

February 3rd, 1914.—Electric reactions.

	Galvanism.	*Faradism.*
R.	KCC > ACC (0.2 ma. : 0.4 ma.).	No response.
L.	KCC > ACC (2 ma. : 2.75 ma.).	Response.

Contraction slower than on the normal side, but not actually sluggish.

I have to thank Dr. Watson-Williams for his kind permission in allowing me to publish the notes on these cases from his clinic at the Royal Infirmary, Bristol.

Progress of the Medical Sciences.

MEDICINE.

The Campaign against Tuberculosis.—The *Transactions* of the Fifth Annual Tuberculosis Conference, held in August last at Westminster, contains much information as to the progress of the campaign against tuberculosis, and many papers in the *Journal of Tuberculosis*[1] for October deal with individual fragments of the work. The problems as they are being worked out in Wales and Monmouthshire are described by Dr. E. Walford, Cardiff. It is proposed that there shall be the following sanatoria: One for South Wales, providing for 250 adults and 50 children; one for North Wales, providing for 150 adults and 30 children; and one for West Wales, providing for 50 adults. There are to be thirteen hospitals for advanced cases. The King Edward Memorial Association is to provide two-fifths and the Treasury grant three-fifths of the capital expenditure. As regards the provision of sanatoria, Dr. Pearson's book[2] shows that "much is still only just being begun." He states the reasons which make it necessary for the State to provide and maintain sanatoria. He anticipates and apparently welcomes the gradual disappearance of efforts of voluntary charity, and their displacement by organised public relief. He considers that the majority of general practitioners apparently have not yet grasped the probable trend of events, that the number of thoroughly trained tuberculosis officers is admittedly too few, and that we should hear no more of the frequently repeated lament that there will be nothing left for the general practitioner to do. In the Government scheme the officials must each bear their part, the medical officer of health as co-ordinator and general administrative adviser, the tuberculosis officer filling the place of consultant diagnostician, examiner of contacts, and adviser as to the line of treatment to be adopted, while the general practitioner will chiefly be concerned in looking after the home conditions. As regards the Dispensary, its functions and work have been well summarised by Dr. King Patrick.[3] He claims that it must be the link binding the Public Health Department, the Sanatorium, the Hospital for Advanced Cases, the Labour Colony, the School Medical Inspection Department, voluntary agencies, and the general practitioner, to one another, and correlate the work of each. In the carrying out of all these details, Dr. Pearson remarks that "those who already have an experience of managing sanatoria, dispensaries, and other institutions for tuberculosis,

sometimes complain that the Councils are unsympathetic and untutored." [4]

The advent of the tuberculosis scheme of the National Insurance Act is a fitting time for the appearance of a new annual [5] dealing comprehensively with the whole subject. Science and philanthropy have done much good work in the development of the matured campaign of the national and international aspects of the war against tuberculosis, and now that the Governments are taking up the work, the co-operation of the existing authorities must be of the utmost value in working on the already proposed basis. The year-book compiled under the editorship of Dr. Kelynack aims at being something more than a directory of sanatoria, hospitals, homes and other institutions for the tuberculous. It seeks to provide a reliable guide to all matters relating to the study and care of the tuberculous. A series of original articles by well-known experts have been well selected, and gives the latest views on all the many questions relating to sanatoria and sanatorium management: the "Editorial Review" is a valuable communication showing how much has been already accomplished, and the leading ideas for future progress. We are now in a position to determine whether things are progressing in a satisfactory direction, or whether endeavours should not be made to amend certain features of the programme.

The Tuberculosis Officer.—As regards the duties of this new officer, these have been more or less defined by orders of the Local Government Board, and have been emphasised by the Astor Report: [6] "He will act in intimate relationship with the medical officer of health, the general practitioner, and the resident medical officers of sanatoria and hospitals, but in his clinical capacity he will be independent of control. At the dispensary his clinical duties will be chiefly concerned with diagnosis and treatment, and he will be called upon to decide as to the suitability of various types of tuberculous disease for dispensary, domiciliary, hospital, and sanatorium treatment." It will be seen that his duties call for some administrative experience, sound clinical knowledge, with much tact and discretion. He must, therefore, be not too young, he must realise his limitations in doubtful cases, and be ready to co-operate with his colleagues in clearing up any doubts which may arise either as regards diagnosis or treatment.

The Sanatorium Medical Staff.—The Sanatorium Superintendent must be somewhat of a tyrannical autocrat, and he has been well described by F. M. Pottenger, of the California Southern University: "A sanatorium is simply the reflection of the man who is at the head of it, and whether it succeeds or fails depends upon him. The sanatorium treatment of tuberculosis

requires of a medical director certain important qualifications. He should first of all understand the disease which he is expected to treat, and all things being equal, the better he understands it the better will be his results. Next, and not of less importance, he must be possessed of patience. He must be sympathetic, yet firm. He must be optimistic, but his optimism must be bounded by reason. He must be endowed with qualities of leadership, for he must not only lead his patients, but he must command an army of help. Sanatorium men are born, not made. It is useless to think that a sanatorium can be properly conducted by simply placing a physician, regardless of his qualifications and temperament, at the head of it. The head of a sanatorium should live at the institution, so that he may come into intimate contact with his patients, and be in touch with everything that goes on. The medical director of a sanatorium occupies much the same position as the captain of the ship. Harmony must be everywhere preserved, therefore every department should be under his direction and personal supervision.

"A word regarding medical directors for State sanatoria. These institutions should not be controlled by politics . . . their success depends upon the men at the head of them. It can readily be seen that one fit for such a position is fit to succeed anywhere. Such a position should carry with it a good salary. . . . Unless the board of directors of State institutions look well to this point they will be disappointed in the results obtained."

The private sanatoria for the better class patient who can afford to pay adequately for his maintenance have been in existence for several years, and have been looked upon as models on which such institutions should be framed, but now the general outcry is that these are too expensive, and that a cheaper form of sanatorium, with a less abundant medical staff, becomes essential. Many such exist, and the tendency is to multiply beds unduly, until the patients are too numerous to receive adequate individual attention from the existing staff. One institution familiar to the writer at the present time has 86 beds in constant occupation, with only one medical officer and no visiting physicians. This medical officer has practically no assistance in the daily clinical routine, nor in the registration of this large number of patients. He is also expected to carry out the pathological examinations and the dispensing as well. The position was found to be so untenable, that the last medical officer resigned his office rather than continue to perform the work inefficiently and inadequately.

This question of adequate medical superintendence is one which demands the most careful consideration, and one which

is not understood by the lay authorities. Members of Insurance and other committees appear to think that medical supervision is for the most part a mere matter of routine, and that the number of patients may be increased almost indefinitely without increasing the medical staff. The contrast between the private and the more public sanatoria in this respect is great, as, for instance, one institution known to the writer where thirty-seven patients have two medical officers and a medical assistant, whereas at the other extreme we have eighty-five patients with only one medical officer, who does everything. Now it is well recognised by all who have had experience of this disease that no two patients can be classified as alike, and they must, therefore, receive individual attention and careful consideration from day to day. One medical sanatorium officer writes: "Personally, I have always found that forty chests are ample to have in my mind at once." When the number of patients at one time is greatly in excess of this number, it is impossible that the medical officer shall give such attention as is likely to be effective. As the number increases, the quality of the work must deteriorate, and it will generally be held by medical men that ineffective work must not be tolerated.

Pearson[7] remarks that "when the State undertakes the provision of sanatorium treatment for tuberculosis, the amount of personal attention required from the doctor of the institution must be ample. What is considered ample at present may soon be thought to be inadequate. Sanatoriums of 150 to 250 beds are now contemplated, and are already in existence. For such an institution three (or four) doctors are considered sufficient. But the essence of recent advances in medical treatment is the appreciation of the necessity for close personal supervision. . . . I believe, therefore, that a good arrangement to aim at in the management of State sanatoriums is that of having an institution where the maximum number of patients is 75. Then one head doctor with two assistants can study sufficiently closely all the patients under his care."

Walters[8] gives some useful remarks on the medical staff. The number of patients which can be properly supervised by each medical officer depends largely upon their condition. Not more than thirty or forty patients should be allotted to each doctor if they are mainly febrile or complicated cases; but double this number of ambulant uncomplicated cases could quite well be manged. Since one medical officer at least must always be in the sanatorium, every such institution should have not less than two medical efficers, otherwise the strain of the work becomes very irksome.

Every large sanatorium requires a competent pathologist to attend to the microscopical and bacteriological work, which

will include the preparations of vaccines and of doses of tuberculin.

In the early days of sanatorium work it has been impossible to provide for more than one medical officer at a new institution to be maintained by public and philanthropic efforts, but this arrangement has many disadvantages and difficulties. It would be better to have two medical officers with a larger number of beds than one doctor with a small number of patients, for many reasons. There should, of course, be one medical officer always on the premises, especially when the institution is away in a country district, with no other medical aid at hand in case of necessity. Then again, one of two medical officers could be present at and supervise the principal meals; and it would be possible for one of two to superintend graduated exercises and labour in a way which must be impossible with only one. For these and many other reasons it is obvious that the institution with only one medical officer should be a thing of the past, and now that State aid is becoming general, we should no longer hear of any sanatoria where the one doctor has no regular hours off duty, and little opportunity of getting away from duty at any time. The isolated life and the sole responsibility which have existed hitherto should no longer be countenanced. Consultation with a colleague and division of labour with some degree of specialisation, as for instance the dealing with dental, oral, laryngeal and nasal cases, must often be desirable, and should be possible at all times.

Drug Treatment of Pulmonary Tuberculosis.—It is commonly assumed that the sanatorium takes the place of drug treatment, and that there is no need for the latter, but it is gratifying to find an excellent article by Dr. Newman Neild,[9] from which we quote as follows: "Under the sanatorium method it was important to make the patient 'concentrate' upon the system, so that full attention to and full reliance upon 'playing the game' be not disturbed by belief in a bottle of medicine. Moreover, since certain symptoms, such as night-sweats and insomnia, generally disappear under sanatorium treatment in a few days, the digestion improves, and cough becomes less troublesome, drugs took up a less important place. Formerly treatment was too symptomatic, and recently the symptoms have been too much neglected. . . . Many have wondered why drugs, which were valuable aids under less hygienic conditions, became useless under better conditions. . . . That 'cures' are still in the minority under tuberculin we must admit with regret."

There seems to be still a wide field for drugs, and an excellent summary of what drugs can do is found in this article. The use of continuous antiseptic inhalations is described by Dr. David B.

Lees (p. 148), and is also mentioned by Dr. C. Muthu (p. 252), whose various papers on the subject are well known.

R. SHINGLETON SMITH.

REFERENCES.

[1] 1913, vii, 19.

[2] *The State Provision of Sanatoriums.* S. V. Pearson, M.D. Cantab., 1913.

[3] *Brit. J. Tuberculosis,* 1913, vii. 228.

[4] *Ibid.,* 1914, viii. 10.

[5] *Tuberculosis Year-Book and Sanatoria Annual.* T. N. Kelynack, M.D. Vol. i, 1913–14. London: John Bale, Sons & Danielsson.

[6] *Interim Report of Dept. Committee on Tuberculosis.* London: Wyman & Sons. 1912.

[7] *State Provision of Sanatoriums,* 1913, p. 48.

[8] *Sanatoria for the Tuberculous.* F. R. Walters. London: Geo. Allen & Co. 1913.

[9] *Year-Book,* p. 142.

SURGERY.

Embolism and Thrombosis of the Mesenteric Vessels.—Of the various causes of acute abdominal trouble the above vascular accidents are among the most difficult to recognise and treat. An excellent and comprehensive review of the subject, based on the records of 360 cases, seven of them hitherto unpublished. has recently been written by Leslie B. C. Trotter,[1] and it is from that publication that the information given below has been abstracted.

Historical.—The first case of the kind recorded appears to be that of Tiedman in 1843, and the next cases were three described by Virchow in 1847 and 1854. Trotter himself has examined the records of 360 cases, as mentioned above, a fact which well illustrates the increasing attention which is being given to the subject.

Morbid Anatomy.—Mesenteric vascular occlusions may be of veins alone, of arteries alone, or of both arteries and veins simultaneously. The clinical phenomena associated with these various occlusions are practically never clear enough for their differential diagnosis. Of Trotter's cases about 41 per cent. were of venous, 53 per cent. of arterial, and 6 per cent. of combined venous and arterial obstruction.

Mesenteric Venous Occlusion.—Occlusion of the inferior mesenteric vein is clinically unimportant. Probably occlusion of the superior vein leads to infarction of the intestine only when

[1] *Embolism and Thrombosis of the Mesenteric Veesels.* By Leslie B. C. Trotter, M.A., B.C. Cantab.—Cambridge University Press, 1913.

the clot extends into the anastomising arcades, and their radicles, close to the intestine. The thrombosis may be primary in the superior mesenteric vein, or secondary to a descending thrombosis of the portal vein. The latter is the commoner. All the possible causes of pressure upon the portal vein, *e.g.* syphilitic perihepatitis, alcoholic cirrhosis or carcinoma of the liver, glands or other swellings in the portal fissure, gall stones, etc., by obstructing the circulation, are predisposing causes of thrombosis. When sepsis is superadded to portal obstruction, then if thrombosis occurs its peripheral extension becomes likely. Thus sepsis in any part of the alimentary tract draining into the portal system may cause thrombosis. Primary thrombosis of the superior mesenteric vein may arise in a similar way. The commonest septic foci having these effects are those in connection with the appendix, and in the female with the pelvic organs. Of the 137 cases of venous thrombosis of Trotter's collection, there were 91 in which the intestine showed infarction.

Arterial Thrombosis and Embolism.—Of 197 cases of these affections in the series, 106 showed infarction of the intestine, 36 hemorrhages or great engorgement, and 10 ulceration of the mucosa. The percentage of serious effects is thus a high one in arterial obstruction. This is the case because the superior mesenteric artery is "functionally," though not anatomically, an end artery. There are ten cases on record in which collateral circulation was established before death, but in six of these it proved ultimately insufficient. The arteries may be occluded by thrombosis or embolism, or more rarely by endarteritis, arterio-sclerosis, or atheroma either of the arteries themselves or in the aorta at the place of their origin. By many authorities arterio-sclerosis of the mesenteric vessels is considered to be a very important etiological factor in thrombosis. The sclerosis may give rise to a prodromal clinical condition, "intermittent mesenteric claudication," in which there are attacks of spasmodic pain in the bowels and other symptoms of disorder and motor insufficiency, attributed to local anæmia, "where greater performance of work is required of the intestine." Embolism of the mesenteric arteries is much commoner than thrombosis. The embolus comes from the pulmonary vessels, the heart, or the aorta; by far most frequently from the heart. "There are only two undoubted cases of embolism of the inferior mesenteric artery alone." It is very rare also to have the superior and inferior arteries simultaneously occluded. There is a considerable amount of evidence supporting the view that the intestinal and other lesions found in Henoch's purpura are of embolic origin, the emboli coming from the heart. Some cases of mesenteric embolism have been associated with purpuric hemorrhages. Simultaneous occlusion of mesenteric

arteries and veins has only been recorded in about twenty-two cases.

Effects on the Intestine.—The effects of occlusion of the vessels are (1) hemorrhagic infarction, or less severe hemorrhagic changes, and (2) anæmic gangrene or ischæmia of the intestine. The extent of the infarction varies. There may be merely a few necrotic areas, or a short coil of intestine may be involved; or, on the other hand, the whole of the large and small intestines may be affected. Rarely two or more separated infarctions occur.

Anæmic gangrene, of which Trotter tabulates data of nine cases, has not been satisfactorily explained. The obstruction seems in the cases of this type to have been in the vessels close to the intestinal walls, and was possibly preceded, as Trotter suggests, by a steady reduction in the size of the vessels supplying the part, affecting the veins as well as the arteries, so that when complete obstruction ensued there was no venous regurgitation.

Symptomatology.—The great majority of cases run their course in fourteen days, and many in a much shorter period of time. The division made by Trotter into acute cases lasting a week or under and chronic cases lasting eight days or more is arbitrary, but has conveniences. A greater proportion of arterial than venous cases are acute. The disease has diverse clinical forms, and it is rare for a given case to present more than a few of the symptoms enumerated below. Though the onset is usually acute, yet conditions predisposing to the affection may have been recognisable months or years previously. Such conditions include valvular heart disease, hepatic cirrhosis and chronic Bright's disease. A striking feature of the cases arising from appendicitis or pelvic septic processes is a latent period varying from a few days' duration to six or eight weeks.

The following are the characteristic symptoms and signs which have been met with in the recorded cases. Sudden severe abdominal pain, nausea, vomiting of blood-stained matter, diarrhœa with blood in the evacuations, collapse with anxious expression and clammy skin, and rapid pulse. The temperature may be raised, normal, or sub-normal. The abdomen early becomes tender. Constipation, often absolute, follows diarrhœa, though sometimes the bowels act normally until constipation ensues. Pain may abate for a day or two, and then increase again, with continuous vomiting of dark-coloured and offensive matter. Finally the patient often becomes comatose. Possibly the absence of intestinal obstruction observed in some cases was due to the fact that the patient did not survive long enough for this effect of the disease to become prominent. The amount of blood in the stools may be

small or great in the earlier stages, and sometimes there is a discharge of blood shortly before death, following the period of intestinal obstruction. In the diarrhœa stage rectal tenesmus is not uncommon, and the motions may be thin, watery and offensive. Hiccough, probably from the onset of peritonitis, may be a source of great distress. In a few cases an ill-defined mass has been felt in the abdomen, due to swelling of the mesentery and intestinal walls. Respirations tend to become thoracic in type, and œdema of the bases of the lungs may follow.

Diagnosis.—This is extremely difficult, and was only made thirteen times in Trotter's series of 360 cases. One cause of error in diagnosis is the variability and incompleteness of the clinical picture, and another the fact that hitherto the disease has been considered too rare to merit attention. The existence of endocarditis and evidence of embolism elsewhere would suggest the correct diagnosis in embolic cases. Perhaps the distinction from *acute intussusception* is most difficult. The age of the patient affords some help, for mesenteric obstruction, though it may occur at any age, and has been recorded at the age of a month at the one extreme and at 85 at the other, yet is much more prone to occur between the ages of 30 and 70. The presence of a sausage-shaped tumour would strongly point to intussusception. In *volvulus* there will usually be more complete intestinal obstruction from the beginning, and the abdominal distention will be more rapid and greater. In *carcinoma of the colon* there may be a suggestive previous history, and visible peristalsis is likely to be present. The latter is extremely rare in mesenteric thrombosis and embolism. In *internal strangulation* hæmatemesis is very rare, and the onset of intestinal obstruction is usually more sudden. The complications which may follow appendicitis with acute intestinal obstruction are very difficult to differentiate from one another. They include toxæmia, peritonitis, adhesions and infarction. The appearance of blood in the stools, after or without an enema, would be helpful in differentiating *acute pancreatitis.*

Treatment.—Operative exploration in all severe cases at an early period is strongly indicated, for the termination of the disease is nearly always fatal if large or medium-sized vessels are obstructed, and relief is not obtained by radical procedures. Resection of the infarcted portion of the bowel is the ideal treatment. Occasionally affected intestine may be found on exploration which is still viable, and recovery take place without resection. "The results of operation, exclusive of cases in which nothing was attempted, give 36.2 per cent. of recoveries" (Trotter). It is not considered prudent to remove more than one-third of the total length of the small

intestine. If less than a certain amount is left inanition follows, with intractable diarrhœa. Gobiet resected 320 cms. with success. Trotter quotes a paper by Flint[1] on the subject of extensive resections of the bowel. Flint collected fifty-nine cases in which such resections had been made. In all but one case two metres (78.74 inches) and over were removed, and fifty of the fifty-nine patients recovered.

J. Lacy Firth.

Reviews of Books.

The Interpretation of Dreams. By Prof. Dr. Sigmund Freud. Authorised Translation of Third Edition by A. Brill, M.D. Pp. xiii, 510. London: George Allen & Co. Ltd. 1913. 15s. net.

This new work of Freud shows further proof of his remarkable ability in psychological analysis, and has added greatly to our knowledge of the dream, its exciting and determining factors, meaning and relationships. We think, however, that the author pushes his subtilty in analysis and suggestion in questioning too far and may assume too much from the result. The inference of a sexual origin in nearly all cases we cannot think warranted, although, no doubt, specimens of this kind gravitate towards the specialist who invites them. The book is too long and complicated to allow of its many conclusions being summarised in the short space here available. The main assumption is that desires and apprehensions which have been suppressed find an outlet in dreams, but one more or less modified by the resistance of the "censor," which does not lose its power even during slumber. Hence they appear in a symbolic form which requires certain known methods of interpretation to be employed for its recognition. Thus, dreams may have a double meaning, a manifest, which is immediately evident, and a latent which is only disclosed by analysis. The latter process consists of the employment of known methods of association-revival such as Freud and Jung have perfected. The analysis of dreams is made for the same purpose and much on the same lines as psycho-analysis in the waking subject. In this work will be found certain definite rules upon which dreams are constructed, manifested and correctly interpreted.

[1] *Johns Hopkins Hosp. Bull.*, 1912, xxiii, 127.

The Elements of Bandaging and the Treatment of Fractures and Dislocations. By WILLIAM RANKIN, M.A., M.B., Ch.B. Pp. x. 116. London: Oxford Medical Publications. 1913. Price 5s. net.

As stated in the Introduction, this manual deals essentially with details which are not easily found in most text-books. It is intended for practitioners of limited experience. The commonest conditions are those chiefly described, and the details of treatment given are those which have proved most satisfactory in practice.

The writer forcibly advocates the use of anæsthesia in the diagnosis and treatment of fractures and dislocations, and is of the opinion that without it, in most cases, "the examination will be incomplete and of necessity the treatment will be defective." He writes, "An anæsthetic is routine practice in every properly conducted surgical clinique whenever required, and ought to be so in general practice"; and again, under dislocations which "of course can be reduced without anæsthetics; any brute of sufficient physique who has a little knowledge can manage it; the question is whether he would permit it to be carried out on his own person, or in the case of one of his near relatives."

In our opinion this small manual is a good one. It is sufficiently illustrated, and gives in the text many serviceable details of the treatment of fractures which we have not seen noticed elsewhere.

A Text-Book on Gonorrhœa and its Complications. By Dr. GEORGES LUYS. Translated and Edited by ARTHUR FOERSTER, M.R.C.S., L.R.C.P. (Lond.). Pp. xix, 384. London: Baillière, Tindall & Cox. 1913. Price 15s. net.

It seems to us particularly opportune that this very complete text-book on gonorrhœa has appeared in this country at a time when venereal diseases are receiving special attention both from the medical profession and the general public. Its appearance is also opportune because the study of syphilis and its treatment has of late absorbed so much attention, that that of gonorrhœa and its complications has been overshadowed. Yet from the social point of view, as well as from that of the individual victims, gonorrhœa is a disease of the first importance. Too long have many of the male victims of the disease been prone to regard it lightly, though death is a possible result,

and lifelong disability a fairly common one. Too often have they carelessly, ignorantly, or culpably infected the innocent; have given, for example, quoting Luys, their young wife "in exchange for her virginity a poison which may cripple or kill her." "It is pitiful to see the pale faces, the anxious and worn looks, the hollow eyes of these poor young women who suffer permanently from internal pains until they submit to a surgical operation, which gives them the desired relief, but condemns them to complete sterility."

Have not we, the members of the medical profession, been too largely responsible for the ignorance, apathy, and carelessness of the public in this matter? Have the teachers in our medical schools adequately considered gonorrhœa, adequately treated its victims, adequately taught their students what the treatment should be? Have they insisted that our hospitals and infirmaries shall be adequately equipped for such treatment? It is our opinion that with a few notable exceptions they have not. These things are better done on the Continent. We hope that the volume before us will stimulate the younger generation of teachers in our hospitals to greater efforts in these directions.

We believe this work to be the most complete in our language on its subject. The text is lucid and precise, and the illustrations numerous and helpful. Alike to author, translator and publisher we tender our thanks for the production of a most valuable text-book.

A Manual of Immunity. By ELIZABETH T. FRASER, M.D. Pp. x, 199. Glasgow: James Maclehose & Sons. 1912. Price 5s. net.

This little book of 200 pages will be found an extremely useful résumé of those aspects of the theory of immunity which are of greatest practical importance to the diagnostician and practitioner. After a brief historical survey, the author plunges *in medias res*, and in terse and lucid language deals in succession with the body fluids, the cell, and the micro-organism as factors in immunity, and then with immunity-reactions employed for therapeutic ends and for diagnostic purposes, ending with a chapter on anaphylaxis. The kindred topics of salvarsan and neo-salvarsan are briefly treated in an appendix. To what extent the writer draws on personal experience in her descriptions of diagnostic processes and results is not evident, and is just a point on which one would like more information. For example, the modifications of the Wassermann test are dismissed with the remark that none are thoroughly trustworthy. The reviewer has made personal trial of the Fleming

modification in many hundreds of selected cases, with the clinical appearances and histories available for comparison, and an analysis of the results convinces him that, carried out conscientiously, and as Fleming now uses it, the results are of great practical utility, whilst the comparative simplicity of the method enables one to employ it in scores of cases which otherwise would be neglected from this point of view.

Obstetric Aphorisms for the use of Students commencing Midwifery Practice. By JOSEPH GRIFFITHS SWAYNE, M.D. Eleventh Edition, revised and edited by WALTER CARLESS SWAYNE, M.D. Pp. xvi, 216. London: J. & A. Churchill. 1913. Price 3s. 6d. net.

Swayne's *Obstetric Aphorisms* was well known as an almost indispensable companion to students taking out practical midwifery long before 1893, the date affixed to what is in this edition stated to be the preface to the first. In that preface Professor Joseph Swayne said that "the object of this work is to give the student a few brief and practical directions respecting the management of ordinary cases of labour, and also to point out to him, in extraordinary cases, when and how he may act upon his own responsibility, and when he ought to send for assistance. The student is never placed in a more trying situation, nor has to incur a greater amount of responsibility, than when he is attending a difficult case of labour in a place remote from medical aid; and the end of this work will be fully answered if it serve to keep any, who may be so situated, from the opposite extremes of temerity or timidity. It is not intended to be used in any way as a substitute for a systematic treatise on midwifery."

The work has for some years been out of print, and we know that students have felt the want of such a guide as this, and they will no doubt feel grateful to Professor Walter Swayne for having supplied that want. In revising and bringing this new edition up to date, the editor tells us that he "found it difficult to do justice to such a work and yet retain its original character," and that he has endeavoured "to retain the experience and sound judgment of the author even at the expense of modernity." In this he has been successful even to a fault; for we think that he might have employed the pruning-knife more freely: such terms, for example, as milk, ephemeral, and miliary, applied to fevers, might have been deleted. Upon the whole, however, the work has been thoroughly revised and brought up to date, and is admirably suited to the purpose for which it is intended. Every student taking out practical midwifery should carry a

copy in his pocket, and refer to it in all cases of doubt or difficulty. He will then understand how to manage ordinary cases, what deviations from the normal he may undertake by himself, and when he should send for assistance, in fact all that he needs to know.

Synopsis of Midwifery. By ALECK W. BOURNE, B.A., M.B., B.C. Cantab., F.R.C.S. Pp. 212. Bristol: John Wright & Sons Ltd. 1913. Price 5s. net.

This attempt at preparing a Synopsis of Midwifery is in our opinion a very successful one. The book is very full of detail, but the matter is so condensed as to occupy but little space, and the style though necessarily terse is by no means unpleasant. The arrangement of paragraphs and type admirably fulfils its purpose of presenting the text in a manner easy for reference or committing to memory. To the general description of the mechanism of normal labour we think a brief account of the mechanism in each individual position might have been appended, since this is so frequently an examination question, and the ability to answer it with speed and certainty in accurate, concise language effects great saving of time which may be much needed for the rest of the paper.

We heartily recommend the book to students going up for examinations. It is too full and reasoned to be a mere "cram" book, but will crystallise previously-acquired knowledge into a form easily produced and well adapted to the answering of examination questions.

Radium Therapeutics. By N. S. FINZI, M.B. Lond. Pp. ii, 112. London: Henry Frowde and Hodder and Stoughton. 1913. 6s. net.

A monograph by one of the most experienced pioneers in such a new branch of therapy as this work expounds is difficult to criticise, but one notable and attractive feature is the author's diffidence in making claims for radium therapy, particularly in diseases which in his own experience it has proved of doubtful value. The introductory chapters on the nature of the various radiations, the different methods by which they can be utilised, and on the histological actions of the different rays, will be very much appreciated by those who have had but little practical acquaintance with the subject. The succeeding sections dealing with the diseases in which radium has been employed clinically will be of the utmost value to those who have patients under their care for whom it is thought radium therapy presents useful possibilities.

An International System of Ophthalmic Practice. Edited by WALTER L. PYLE, A.M., M.D. **Therapeutics.** By Dr. A. DARIER, Paris. Translated by SYDNEY STEPHENSON, M.B., F.R.C.S. Pp. xiv, 444. London: Rebman Limited. 1911. 17s. 6d. net. —This book is divided into general and special therapeutics. The first half is a dictionary of all the remedies which have ever been used by anyone in eye work either as applied locally or for systemic use. As a work of reference it is too short in detail, while no one will willingly read through it for the purpose of acquiring knowledge. The second half is a dictionary of the diseases of the eye, followed in each case by suggestions for treatment. These are culled from all over the world, and as a result they are very unconvincing. The book had to be written to fill up the place in the series, and as such the best effort possible has been made. The author has been at pains not to overlook anything, and it will be found useful in suggesting treatment in cases which have not yielded to ordinary remedies.

Salvarsan in Syphilis and Allied Diseases. By J. E. R. MCDONAGH, F.R.C.S. Pp. vi, 164. London: Oxford Medical Publications. 1912. Price 7s. 6d.—Mr. McDonagh has given a most readable account of the administration of Salvarsan. His description of the technique is admirably clear and instructive, and he writes with commendable cautiousness of the wonderful results which follow the treatment. Chapter xvi is devoted to a discussion of the merits and use of Neo-Salvarsan. The book is indispensable to anyone who essays to treat syphilis according to the modern methods of Ehrlich.

Diseases of Women. By G. E. HERMAN, M.B., F.R.C.P., F.R.C.S., and R. DRUMMOND MAXWELL, M.D., F.R.C.S. 4th Edition. Pp. xiv. 899. London: Cassell & Co. Ltd. 1913. 25s. —We welcome another edition of Herman's well-known work on *Diseases of Women*. It is, of course, essentially the same as its predecessors, and is written in Dr. Herman's usual dogmatic style, with the quaint turns of phraseology every now and then which give such a charm to the book and help to fix the author's teaching in the reader's mind; but it has been brought in all parts thoroughly up to date, and in the matter of description of operative procedures is greatly in advance of previous editions. Herman's *Diseases of Women* has always held a position of its own amongst books on this subject. Its arrangement, based on the consideration of the main symptoms on account of which a patient may seek advice, marks it off at once from other books which aim at a systematic classification of some kind, and this peculiarity runs through the whole of the author's treatment of his subject. The aim of the work is, as the title states, to help in the investigation and treatment of any particular case rather than to present a clear view of the

subject from the academical standpoint. The result is that the book is excellent for the practitioner to turn to for reference, full of wise suggestions and helpful advice drawn from much clinical experience, but is rather bewildering to the student, who needs his subject to be analysed for him according to some obvious scheme to assist him in memorising it for examination purposes. More attention might have been given to the pathological side, and the value of the book enhanced by the inclusion of good micro-photographs of morbid tissues. Some of the coloured plates are good, but in some the colouring is not so successful. The volume altogether is handsomely produced, and is much more elegant in arrangement, type, paper and binding than earlier editions. It is a book which could ill be spared, and we are glad to see it entering in the present form on a new lease of life.

Diseases of the Eye. By M. STEPHEN MAYOU. Second Edition. Pp. xiv, 306. London: Oxford Medical Publications. [1912.] 5s. net.—This is an excellent book in its way. It is packed full of information, but difficult to digest, for the student is not made to understand fully the why and wherefore of the various statements. Such knowledge is almost certain to be short lived. In the appendix is given a list of the various drops and ointments used in ophthalmic practice, also the visual requirements of the public services that have eye tests.

Diseases of the Eye. By Sir HENRY R. SWANZY, A.M., M.D., and LOUIS WERNER, M.B., F.R.C.S.I. Tenth Edition. Pp. xviii, 634. London: H. K. Lewis. 1912. 12s. 6d. net.—For many years this book has held its own as a great favourite both with students and practitioners. Considerable changes have been made in this edition, and the book has also a more convenient shape. Coloured figures have been introduced, and much up-to-date matter appears for the first time. There is so much to be compressed into a book of this sort, that some subjects suffer a little; for instance, the treatment of heterophoria only occupies half a page. This subject has become increasingly important of recent years, and anyone interested in it would naturally consult a special work. There are very few text-books which have condensed a subject so well as this one with so little detraction from its usefulness, and at the same time maintaining its readability.

Mind and its Disorders. By W. H. B. STODDART, M.D. Second Edition. Pp. xvi. 518. London: H. K. Lewis. 1912. 12s. 6d. net.—It was to be expected that a further issue of this book would be required at the end of a few years. One better designed and executed for its purpose could hardly be conceived. It is clear, concise and comprehensive; vexed questions are so far as possible avoided, and the reader may well commit to

memory all presented to him in the assurance that he will not have soon to unlearn. The work is no mere compendium of the world's literature on its subject, but manifests the author's independent thought and research throughout, and, let us add, in an unobtrusive way. This thorough, general, personal investigation of all phases of insanity is responsible for the equable treatment of all of them, for the satisfactory scheme adopted, and the correct proportion between its sections. Most recent scientific research appears to have been under review, and what it is well to bring to the student's notice he will surely find in a clear and concise form. Thus, the psychopathology of Freud, the investigation of sub-conscious states in relation to his theories and to those of hysteria, the subjects of regional analgesias and areas of over-representation resulting, the thalamic basis of emotions, and many other matters of interest are set forth. The author's ability for clinical instruction is nowhere better shown than in the chapter on Dementia Precox. His grouping of various dystrophic conditions under the syndrome of confusional insanity and the alliance of this with the toxic psychoses is, we are sure, sound and conducive to the better diagnosis, classification and treatment of insanity. The preliminary section on normal psychology is an especially valuable one, and written with a direct relation to the chapters on Morbid Psychology which follow. The closing remarks on nerve-tissue staining and examination of cerebro-spinal fluid are well included for the sake of completeness. We strongly commend the book, which is well printed and suitably illustrated.

Anæsthetics and their Administration. By Sir FREDERIC W. HEWITT, M.V.O., M.A., M.D. Cantab. Prepared with the assistance of HENRY ROBINSON, M.A., M.D. 4th Edition. Pp. xv. 676. London: Macmillan & Co. Ltd. 1912. 15s. net.—Owing to recent developments in the field of anæsthetics, Sir Frederic Hewitt has found it necessary to re-edit his well-known book on the subject; and in this, the fourth edition, we find that not only has every part been brought up to date with some of the chapters re-written, but two entirely new chapters have been added—one dealing with local anæsthesia, the other with the medico-legal aspects of surgical anæsthesia.

Many of the newer methods have not yet been practised long enough to call for conclusive criticism, but the author has not shirked from expressing his opinion on such methods as spinal analgesia, open ether, intravenous ether, and combination of alkaloids with general anæsthetics. Spinal and local analgesia have not received such generous treatment as have most of the other subjects; the various methods of producing them have not been fully compared and discussed, and their description

lacks almost all detail of technique. The chapter on the medico-legal aspects of anæsthesia, written by Sir Frederic Hewitt and Mr. Cotes-Preedy, could not have been expressed more lucidly or with greater fairness.

We feel that in producing this edition of his book the author has presented us with much temperate criticism concerning the multitude of recent innovations, each of which has in its turn been so confidently advocated by its particular supporters; and it is especially in this connection that the present edition may be relied on to afford help to the bewildered worker and warning to the enthusiastic experimenter.

The "Nauheim" Treatment of Diseases of the Heart and Circulation. By LESLIE THORNE THORNE, M.D., B.S. Fourth Edition. Pp. vii, 104. London: Baillière, Tindall and Cox. 1913. 3s. 6d. net.—It is evident that the profession, and possibly also the public, are interested in the Nauheim methods of treatment, for this little book has reached a fourth edition. It opens with an account of the baths and graduated exercises of which the treatment consists. This is followed by a summary of indications and contra-indications, and the book closes with accounts of cases in which striking benefit has been perceived as a result of the treatment. Among the changes for the better which are ascribed to the treatment is the disappearance of extra-systolic arrhythmia, a form of improvement which is often achieved by merely limiting the patient's exercise.

The Mineral Waters of Vichy. By CHARLES COTAR, M.D. Pp. viii. 208. London: H. K. Lewis. 1913. 4s. net.—A foreword by Dr. Vaughan Harley demands that the waters of Vichy shall be regarded not as a pleasant beverage, but as a serious method of treatment of disease. Hydrotherapy claims to be a modern science, and the author endeavours to deal with the subject from this standpoint. After giving the theories concerning the origin of the waters and their chemical, hygienic and gaseous properties, he reviews their physiological action and deduces their therapeutic indications. The cult of a fashionable watering-place is sometimes founded on a "fashionable infatuation"; the hydrologist must be to a great extent guided by empiricism, and he must of necessity "glorify his office," but the fame of Vichy is beyond all criticism, and Dr. Cotar and his colleagues have an easy task in guiding many thousands of visitors yearly into better health by means of the never-failing artesian springs of the valley of the Allier.

Laws of Sexual Philosophy. By J. L. CHUNDRA, L.M.S. Pp. v, 208. Calcutta. 1913. 4s. net.—It is perhaps unfair to criticise this book from a purely western standpoint, certainly it does not appear suited to the needs of the western student of gynæcology and obstetrics, for whom (in part) the author

has apparently designed it. It is dedicated to a mythical lady apparently domiciled in the crescent moon, who bears a strong resemblance to the houris who adorn pictorial posters, and who owe their loveliness to somebody's soap, or somebody else's health food. The pages are filled with quotations from poets and philosophers, extracts from Aryan literature, and short accounts of the physiology and pathology of the genitalia. The quotations are not always exact; for instance, we noted some well-known lines of Tennyson attributed to Cowper, and the physiology is sometimes expressed in a curiously florid manner, which does not add to its scientific accuracy. The ethical position of the author is unimpeachable throughout, and for this reason we do not wish to criticise in further detail a book which is only likely to be used in this country for purposes for which it was never intended.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Second Series. Suaheli–Testut. Vol. XVII. Pp. 788. Washington. 1912.—We again bear testimony to the careful and arduous labours of the compilers of this indispensable series of references to medical literature. The present volume contains 2,357 author titles, 3,571 subject titles of separate books, and 36,898 titles of articles in periodicals. Syphilography takes up more than two hundred pages, and "surgery" is credited with more than a hundred. We always look forward with pleasure to the receipt of these annual volumes, for which we have no other words than those of praise.

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. XXXIV. Philadelphia: Printed for the College. 1912.—We have not space to do more than briefly call the attention of our readers to these *Transactions*, which embody much good and interesting work. The present volume fully maintains their customary high level. We should, perhaps, especially notice the series of papers on epilepsy, the issue of a debate introduced by Dr. S. Weir Mitchell.

The Medical Annual. Bristol: John Wright & Sons Ltd. 1913.—The thirty-first annual issue maintains its character. The list of authors and contributors is somewhat smaller, and the use of a thin paper has reduced the bulk and weight to a minimum. We find facing page 1 the commencement of a glossary of new terms, and it is intended to make yearly additions to the list. The volume is well illustrated as heretofore, and it fulfils the aim of the publishers to provide the reader with the information he requires and to obtain it from the best source. The only way to review it is to keep it close at hand and consult it on every possible occasion. It rarely fails to give a satisfactory answer to an inquirer.

Medical Laboratory Methods and Tests. By HERBERT FRENCH, M.A., M.D. Third Edition. Pp. viii, 202. London: Baillière, Tindall & Cox. 1912. 5s. net.—This book has deservedly run into a third edition, and the author has taken the opportunity to revise, alter and make such additions as progress and experience have demanded. The methods are all good, and set out in such a manner as to make them easy to apply. It is a most commendable *vade mecum* for the practitioner possessing a medical laboratory.

Lectures on Tuberculosis for Nurses. By OLLIVER BRUCE, M.R.C.S., L.R.C.P. Pp. viii, 134. London: H. K. Lewis. 1913. Price 2s. 6d. net.—This book consists of six lectures delivered to the Queen Victoria Jubilee Nurses. It contains a very full account of the ætiology, diagnosis, treatment, prognosis and prevention of pulmonary tuberculosis, and is written in a clear and readable way, though it would not be an easy book for nurses who have no previous knowledge of medicine, pathology and bacteriology to help them. Thus there are descriptions of the staining reactions of the bacillus, of the theory of opsonins, and of the various anaphylactic tests which have recently been employed. Still, it is quite a good book for senior nurses who intend to take up tuberculosis work, and who have already a good knowledge of the general principles of medicine.

Sciatica. By WILLIAM BRUCE, M.A., LL.D., M.D. Pp. xi, 175. London: Baillière, Tindall & Cox. 1913. Price 5s. net. —In this little book Dr. Bruce elaborates the view that he has propounded before, that "Sciatica" is the result of reflex irritation originating from troubles in the hip-joint. It is illustrated by eighteen plates and radiograms, and an appendix contains very brief notes of seven hundred cases under the personal observation of the author. The book must be read in order to appreciate properly the author's position, and as it is short this will not involve a great expenditure of time. We confess that the chapter on treatment was to some extent a disappointment to us, as it does not seem to put forward anything particularly new or original; still, as the embodiment of the large experience of a careful physician who has given much attention to the subject it is to be received with respect.

Minor Surgery. By LEONARD A. BIDWELL, F.R.C.S. Second Edition. Pp. xvi, 299. London: University of London Press. 1912. 10s. 6d. net.—The fact that a second edition of this work has been required within twelve months indicates that it has been well appreciated, and in our opinion it deserves the appreciation it has received. The author's style is direct, lucid, and interesting. He has covered the ground of minor surgery judiciously and sufficiently, and we do not know of any

book on the subject we can more confidently recommend to the student and practitioner.

The Treatment of Hæmorrhoids and Rectal Prolapse by means of Interstitial Injections. By DUDLEY D'A. WRIGHT, F.R.C.S. Pp. 20. London: Henry J. Glaisher. 1913. 1s. net. —In the preface to this pamphlet the writer affirms his belief, based upon long practice and observation, that there are few, if any, cases of hæmorrhoids which cannot be cured by interstitial injections. The great advantages of the treatment are that it can be carried out with a minimum of discomfort to the patient, and can be administered "from beginning to end without the necessity of the patient lying up or having the daily routine of work interfered with in any way." Detailed descriptions of the best methods of making the injections are given in the pamphlet, and it is our opinion that the treatment advocated is worthy of a much more extended application than it has hitherto received in this country.

Pye's Elementary Bandaging and Surgical Dressing. Revised and partly rewritten by W. H. CLAYTON-GREENE, M.B., B.C. Cantab., and V. ZACHARY COPE, M.D., M.S. Lond. Thirteenth Edition. Pp. viii, 230. Bristol: John Wright & Sons Ltd. 1913. 2s.—This well-known book, of size suitable for the pocket, can be strongly recommended to students beginning work in ward or casualty room, to surgical nurses, and to those studying first-aid in ambulance classes. It contains clear instructions, well illustrated, on all ordinary forms of bandaging, splinting, and wound dressing, and sections on the first treatment of syncope, shock, fits, drowning and poisoning. Directions for surgical case-taking are also given.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H. Lond., and HENRY R. KENWOOD, M.B., F.R.S. Edin. Fifth Edition. Pp. xi. 736. London: H. K. Lewis. 1913. 12s. 6d. net.—The fourth edition of this well-known textbook was reviewed in the *Journal* in December, 1911. We observe that it has added forty five pages to its already considerable bulk. There is little need to comment on its contents, which have been brought well up to date, and include much new matter. Its usefulness and popularity are well evidenced by the rate at which new editions appear, in spite of the competition with numerous other works of a similar character. We can confidently say that there is no better book on Hygiene and Public Health published in this country.

Materia Medica and Pharmacy. By REGINALD R. BENNETT, B.Sc., F.I.C. Second Edition. Pp. xx, 227. London: H. K. Lewis. 1912.—This is a pocket text-book specially compiled for medical students by the pharmacist to University College

Hospital. The classification adopted is one based on pharmacological action, and this fact alone renders the book superior to many of the treatises on the market. There is an important section on standardised preparations, and a summary of incompatibles. As a useful manual for examination purposes, and for subsequent reference, we can heartily recommend the book.

Pathology of the Eye. By P. H. ADAMS, M.B., D.O. Oxon. Pp. x, 194. London: Oxford Medical Publications. 1912. 5s. net.—This work is primarily intended for those preparing for special examinations in ophthalmology. It commences with a short account of the practical methods for sectioning and staining of specimens advised by the author. The bulk of the book is devoted to descriptions of the pathological conditions met with in eye diseases. This is clearly presented, incorporates the most recent views, and is illustrated by a series of excellent plates. At the end is given a short account of the bacteriology of eye diseases. While welcoming this work as giving in convenient form the present state of knowledge of ophthalmic pathology, we think that the portions devoted to laboratory work are not sufficiently full to serve as a practical guide in the laboratory.

Bakteriologiske Studier over Barnetuberkulose. By ARENT DE BESCHE, Ammanuensis ved det Pathologiska-Anatomicke Institut. Pp. 255. Kristiania: Steen'ske Bogtrykkeri. 1912. —Besche has examined lymphatic material obtained from autopsies upon 134 Norwegians. In each case he investigated the mesenteric, bronchial and cervical glands. Tuberculosis was present in 52 cases (38.8 per cent.). Tuberculosis was the cause of death in 28 cases. In 14 others tuberculosis was evident at the necropsy. In the remainder there was latent tuberculosis of the lymphatic glands only. Human tubercle bacilli were found present in 45 cases, and bovine tubercle bacilli in 3 cases. The pathways of infection appeared to be abdominal in 5 cases of the human type, and in 1 of the bovine group. In 5 other cases there were good grounds for assigning the portal of entry to the cervical glands. Besche concludes that the chief means of combating tuberculosis in children is the prevention of transmission of the bacteria from human carriers.

Sclero-Corneal Trephining in the Operative Treatment of Glaucoma. By Lieut.-Col. ROBERT HENRY ELLIOT, I.M.S., M.D., B.S. Pp. xviii. 117. London: George Pulman & Sons Limited. [N.D.] 7s. 6d. net.—This book covers the whole history of operations for glaucoma. It is, of course, written chiefly on the subject of the latest operation, namely sclero-corneal trephining. Col. Elliot is most enthusiastic about this operation. We feel he is quite right, and that it is the only operation for glaucoma, at any rate of the chronic kind. We

also go so far as to think it is the best operation for the acute variety also. He has done his work at the Madras Ophthalmic Hospital, and has operated on 900 cases, so he must be a good authority on the subject. This book gives his experience of the operation, which he describes down to the veriest detail. We can thoroughly recommend a study of the work to anyone who intends to practise ophthalmology, and who up to now has looked on glaucoma as the bugbear of the ophthalmic surgeon.

Annual Report of the Board of Regents of the Smithsonian Institution, 1911.—Amongst the articles on all kinds of scientific subjects, from Sir Wm. Ramsay's presidential address to the British Association, down to an essay on Chinese architecture, which form the appendix to this volume of the Smithsonian Institute's Reports, there is one that is likely to be of supreme importance, at any rate to surgeons, viz. an article by Dr. Courmont, of Lyons, on the "Sterilisation of water by ultra-violet radiations." He passes water over a mercury-vapour lamp, and provided the water is translucent, the water is sterilised by a direct bactericidal action of the rays as fast as it flows over the lamp, and without altering the chemical composition of the water in the least. The author quotes Miguel, who tested the power of the rays in destroying spores. Miguel polluted water with Bacillus mesentericus ruber, "whose refractory spores will resist the temperature of boiling water sustained for several hours. With water thus polluted with 128,000,000 bacilli per liter, sterilisation is almost immediate (in the time necessary for the water to pass through the apparatus at the mean rate of 81 liters per hour). The author very truly says "this experiment should be of special interest to surgeons." Other papers of medical interest amongst this collection of scientific monographs are papers on the "Physiology of Sleep," "Factory Sanitation," and the "Physiological Action of Ozone." The volume is as usual profusely illustrated with most excellent reproductions of photographs.

Studies in Clinical Medicine. By C. O. HAWTHORNE, M.D. Pp. viii, 441. London: John Bale, Sons & Danielsson Ltd. 1912. Price 6s. net.—In this volume the author has published a collection of essays and lectures most of which have appeared in various journals. They were well worthy of being preserved in book form. Dr. Hawthorne has the gift of accurate observation and clear description, so that his essays are full of information conveyed with no mean literary grace. One of his best essays is the first, on "Rheumatism, Rheumatoid Arthritis and Subcutaneous Nodules." We like, too, the article on "The Authority of the *Pharmacopœia*," which embodies many excellent hints on the profitable use of this nowadays rather

neglected publication. There are some interesting records of "cases illustrating recovery from symptoms of brain tumour." But the whole collection is full of examples of Dr. Hawthorne's fine clinical acumen.

Modern Views upon the Significance of Skin Eruptions. By H. G. ADAMSON, M.D., F.R.C.P. Pp. 103. London: John Bale, Sons & Danielsson Ltd. 1912. Price 3s. 6d. net.—In the Goulstonian Lectures for 1912 which are here published, Dr. Adamson emphasizes the changed point of view from which skin eruptions are regarded in modern times as contrasted with the older methods. "Now," as he rightly says, "if we name a new disease we try to indicate its origin and nature," whereas "the earlier names . . . described the appearance or some clinical character of the eruption." The series of lectures form a valuable epitome of the study of dermatology from the pathological aspect, and signalise a further breaking away from the "pictorial" dermatology of the nineteenth century which smothered itself with a cloud of ridiculous nomenclature.

Manual of Surgery. By ALEXIS THOMSON and ALEXANDER MILES. Vol. III.—**Operative Surgery.** Second Edition. Pp. xvi, 620. London: Henry Frowde and Hodder & Stoughton. 1913. Price 10s. 6d. net.—This volume, the second edition of the "Operative Surgery" part of Thomson and Miles' well-known work, has been thoroughly revised and brought up to date. It contains a complete review, necessarily somewhat sketchy owing to considerations of space, of modern operative technique. One cannot help thinking that the separation of the operative portion of what is essentially a student's System of Surgery from the rest is not free from objection. For instance, the volume under review contains a description of the operations for cleft palate, but one has to look elsewhere for any mention of the burning question of the date at which the operation should be performed. The amount of space allotted to various subjects is sometimes not well proportioned, the chapter on arteriorrhaphy being longer than that on hernia, and where space is necessarily at a premium, a description of so obsolete a procedure as Barker's subcutaneous suture of the patella might well be omitted. However, the volume as a whole is readable, sound and practical, and that it is appreciated by those for whom it is written is demonstrated by a second edition being called for so soon after the first.

Coxa Vara: its Pathology and Treatment. By R. C. ELMSLIE, M.S., F.R.C.S. Pp. 35. London: Oxford University Press. 1913. Price 2s. net.—The account of the pathology of coxa vara given in this pamphlet is based upon seventy-seven cases, of which thirty-three were adolescent, thirty-seven infantile, five congenital, and two aberrant, failing to fit into any group.

The pathological anatomy of the various forms of the disease was worked out by the author and published in the Erasmus Wilson Lecture in 1907. Further experience has confirmed the views there expressed and again recorded here. The illustrations are numerous and valuable, and the text clear and illuminating. All surgeons interested in the subject should study this exposition.

Vaccine Therapy: its Theory and Practice. By R. W. ALLEN, M.D., B.S. Fourth Edition. Pp. x, 444. London: H. K. Lewis. 1912. Price 9s. net.—This edition of a carefully written and useful manual contains about 170 pages more than its predecessor, in consequence of "the great developments and extensions which have been made in vaccine therapy" in the interval. After the preliminary chapters dealing with rationale and technique, the different parts of the body are taken in order, and the results to date of the various attempts that have been made to apply vaccine therapy to the disorders thus classified are detailed and commented on. The author is, as before, optimistic in his statements and anticipations, at the same time the material is presented to the reader in a clear and impartial manner, and the limitations and qualifications which stand in the way of unvarying success are duly insisted on. The two or three pages on asthma may be commended as an instance of this attitude; in fact, the whole chapter on the diseases of the respiratory tract is well worthy the perusal of practitioners, no matter what view they take of vaccine treatment. It is more or less a summary of the author's work on the *Bacterial Diseases of Respiration*, issued by the same publishers. In the section on eye diseases there is a remarkable case of cure of a case of gonococcal conjunctivitis with hypopyon (the prognosis of which had been pronounced hopeless) by a single large injection, given as a *dernier ressort*, of 250 million cocci, evidently from a stock vaccine, as the inoculation was done at the first visit. It is noteworthy that, as in most eye cases, it was a large dose that proved so efficacious. The question of dosage is still one of contradictions and mystery to the practitioner who appeals to the vaccine expert for advice, although we are accumulating results of experience which are empirically of great value. It may be said that vaccine treatment forced its way on the attention of the profession by sensational cases of the kind above quoted, effected by a few inoculations, and sometimes by one. And in fact the single dose which will at once effect a convincing improvement, and possibly give such a fillip that nature without further aid will accomplish the rest, is the great thing to aim at; and it must be confessed that at present there is no cut and dried method of arriving at it; above all, the patient himself and his condition at the moment should be carefully taken into

account when deciding. As a rule, in vaccine treatment a first dose effects more improvement than any subsequent one, but there are many exceptions to this. Sometimes improvement is only maintained by continuing regular inoculations. Sometimes several inoculations will produce little effect, when suddenly after a fresh one, differing in no wise from its predecessors, the welcome "jump" of improvement takes place. The utility of tuberculin in cases of probably tubercular conjunctivitis is noted by the author, and the reviewer would be inclined to write still more strongly in its favour. The vexed question of the apparently opposed methods of giving tuberculin is gone into, and the present reviewer agrees entirely with the author's remark that "raised tolerance and diminished sensitiveness to tuberculin-toxin are desirable objectives, but they are not the real objective that we should have in mind." But this is a question that cannot be discussed in a brief notice. As regards the varieties of tuberculin, the author's remarks are equally sensible. Perhaps all that can be effected by tuberculin, and daily experience proves that it is a good deal, can be effected by judicious use according to the indications of old tuberculin, human or bovine T.R., or bacillary emulsion, or a mixture of human and bovine emulsions. Sensitised vaccines, a further development of therapeutics, are too recent to receive mention in this edition, and the same remark applies to "phylacogens." Considerable reserve is advisable in one's attitude towards these agents.

Therapeutic Notes.

COLLOID METALS.

THE term "colloid," originally applied to a certain group of substances owing to their uncrystallisable, glue-like nature, has gradually changed its connotation, and is now used to, describe a certain condition of matter rather than a particular class of bodies. By using appropriate methods, many substances have been obtained in the colloid state, that is to say, in the form of fine particles, which can be suspended in a fluid medium and which have certain definite physical properties. In the present short note we may consider in order (1) the

preparation and physico-chemical properties of colloid solutions, (2) their physiological action, (3) their therapeutic uses.

1. If two bodies, which, in the presence of traces of an electrolyte produce a precipitate, are allowed to act on one another in the absence of the electrolyte, a colloidal solution results, and no precipitate is formed. Slow reduction processes also result in the formation of colloid metals. In contradistinction to these chemical methods there is the physical method first employed by Bredig, which consists of passing an electric current through water from metal terminals. A colloid solution of the metal used results.

Colloid solutions stand midway between an ordinary suspension and a true molecular solution. The particles of the colloid are small enough to pass through an ordinary filter, but large enough to be visible by means of the ultramicroscope. They vary from 0.1μ to 0.001μ in diameter, and are in a state of perpetual motion, oscillatory or Brownian in the larger particles and translational also in the finer ones. These particles have positive or negative electrical charges which vary with different substances and may be reversed by altering the solvent. Traces of an electrolyte will throw down some colloid solutions at once, provided that the ions have a contrary electric sign to the colloid particles. Another class of colloid is not so easily precipitated, and can be brought again into solution by removing the electrolyte. These are known as "reversible" colloids, and include such bodies as protein, gelatin, etc. Traces of a reversible colloid will prevent the precipitating action of an electrolyte on one of the former class. There is, of course, an immense aggregate of surface presented to the fluid medium by the colloidal particles. This surface will vary inversely as the fineness of the particles; in fine colloidal solutions there is a very great surface tension between the particles and the solvent and a large storage of surface energy. The colloids also have great "adsorptive" powers.

2. Colloidal solutions of metals inhibit the growth of bacteria. The cause of this does not seem quite clear. It is no doubt in some way dependent on the physical condition of

the particles, but not entirely, for colloidal solutions of some metals seem to be more actively antiseptic than others. When injected into the animal body certain metabolic changes have been observed, such as increased elimination of urea and uric acid, and a rise in the respiratory quotient. There is also a variable degree of leucocytosis, principally of the mononuclear cells, which is not usually well marked in healthy persons. A temporary rise in arterial blood-pressure and a slight pyrexia have also been noted. The opsonic index is raised apparently by activation of the blood serum. In sick persons there is apt to be a more severe reaction with a considerable rise of temperature, cyanosis and a rapid pulse. It has been ascribed to the setting free of morbid products by the destruction of a large number of bacteria or cells. The leucocytosis is said to be very well marked in those diseases in which it is a normal reactionary process.

3. Both electrically and chemically prepared colloids have been used in medicine, and although the latter have been said by Robin and others of the French school to be inactive and useless, there does not seem at present to be much clinical evidence in support of this statement. Naturally these solutions have mainly been employed in conditions of general septicæmia or local bacterial infection. Among the latter inflammation of the mucous membranes of the nose and throat have been successfully treated by the application of colloidal *silver*, which has also been injected directly into the pleura, the bladder and even solid organs like the epididymis. Colloidal *mercury* has been employed for syphilitic affections locally and generally, and *selenium* and *rhodium* in general infections and cancer. In the latter disease softening of inoperable secondary deposits is said to have occurred after intravenous injections. Colloidal *iron* has long been employed as Liquor Ferri Dialyzatus, which is a colloidal solution of Ferric Hydroxide. The metal itself has recently been prepared in colloidal form and injected intravenously in cases of chlorosis and secondary anæmia. Robin has used colloidal *sulphur* in chronic or subacute rheumatoid conditions. The hydroxide of *copper* has been used in cancer,

and an electrically-prepared colloid of the metal in tuberculosis. In the latter disease the injections must be intravenous, and probably only ameliorate secondary infections.

One or two cubic centimetres (fifteen to thirty minims) of the solution is the usual dosage, but most manufacturers supply sealed ampoules containing one dose each for intravenous injections. The solutions should not be boiled, and the electrically-prepared colloids should not be rendered isotonic with sodium chloride unless previously "protected" by the presence of some reversible colloid. Good results are claimed by responsible observers for this treatment, especially in septicæmia, but it must be remembered that successes are more often recorded than failures, and that even when the latter are published in the medical press the reports are not assiduously circulated by the manufacturers among the members of the profession.

J. M. FORTESCUE-BRICKDALE.

The Library of the Bristol Medico-Chirurgical Society.

The following donation has been received since the publication of the list in December.

February 28th, 1914.

Walter C. Swayne, M.D. .. .. 1 volume.

NINETY-FIRST LIST OF BOOKS.

The titles of books mentioned in previous lists are not repeated.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund, or received through the *Journal*.

Abrahams, G. Herschell and A. *Chronic Colitis* 1914
Alimentary Toxæmia, Discussion on 1913
Basu, B. D. .. .. *The Dietetic Treatment of Diabetes*.. 4th Ed. 1913
Bennett, R. A. .. *Rules for use of Tuberculin* 1914
Cammidge, P. J. .. *The Fæces of Children and Adults* 1914
Cole, R. H. .. .. *Mental Diseases* 1913

Cuff, I. Stewart and H. E. *Practical Nursing* .. .. .. 4th Ed. 1913
Cunningham [D. J.] *Manual of Practical Anatomy* (Edited by A. Robinson). Vol. I .. .. .. 6th Ed. 1914
Elmslie, R. C. .. *Coxa Vara, its Pathology and Treatment* .. 1913
Finzi, N. S. .. .. *Radium Therapeutics* 1913
Forbes, T. D. Luke and N. H. *Natural Therapy* .. .. [2nd Ed.] 1913
Gade, H. G. .. .. *Diagnosen av Barnetuberkulosens kliniske Initialformer* 1914
Gibson, A. G. .. *Post-Mortem Handbook* 1914
Green, C. E. .. .. *The Cancer Problem* .. .. 3rd Ed. 1914
Groves, E. W. H. .. *Synopsis of Surgery* .. .. 4th Ed. 1914
Gruner, O. C. .. *The Biology of the Blood-Cells* 1913
Hawkins-Dempster, H. *Explanatory Lectures for Nurses* 1913
Herschell and A. Abrahams, G. *Chronic Colitis* 1914
Knott, C. G. .. .. *Physics* .. .. 3rd Ed. 1913
Landolt, E. and M. *Defective Ocular Movements* (Trans. by A. Roemmele and E. W. Brewerton) 1913
Luke and N. H. Forbes, T. D. *Natural Therapy* .. [2nd Ed.] 1913
Macdonald, D. M. *The Practitioner's Practical Prescriber* 1913
Paterson, A. M. .. *The Anatomist's Note Book* 1914
Prichard, A. H. .. *Practical Prescribing* 1913
Riviere, C. .. .. *Early Diagnosis of Tubercle* 1914
Scott, T. B. .. .. *The Road to a Healthy Old Age* 1914
Stewart and H. E. Cuff, I. *Practical Nursing* .. .. .. 4th Ed. 1913
Taylor, A. .. .. *The Sanitory Inspector's Handbook* .. 5th Ed. 1914
Tredgold, A. F. .. *Mental Deficiency* .. .. 2nd Ed. 1914
Walker, J. W. T. .. *Genito-Urinary Surgery* 1914
Wallace, J. S. .. *Dental Disease and Public Health* 1914
Walters, F. R. .. *Sanatoria for the Tuberculous* .. .. 4th Ed. 1913

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Laryngological Association, Transactions of the 1913
American Laryngological, Rhinological, and Otological Society, Transactions of the 1913
American Surgical Association, Transactions of the .. Vol. XXXI 1913
American Urological Association, Transactions of the Vol. VII 1913
Archiv für klinische Chirurgie .. .. Bds. C, CI 1913
Boston Medical and Surgical Journal, The .. Vol. CLXVIII 1913
British Journal of Children's Diseases .. .. Vol. X 1913
British Medical Journal, The .. ..Vol. II for 1913
Deutsche Zeitschrift für Chirurgie .. .. Bds. CXXI–CXXIV 1913
Glasgow Medical Journal, The .. .. Vol. LXXX 1913
Hospitals—
Bellevue and Allied Hospitals, New York, Medical and Surgical Reports .. .. Vol. V 1911–12
Guy's Hospital Reports .. .. Vol. LXVII 1913
Westminster Hospital Reports .. .. Vol. XVIII 1913

International Abstract of Surgery	Vol. XVI	1913
Johns Hopkins Hospital Bulletin, The	Vol. XXIV	1913
Journal of Laryngology, The	Vol. XXVIII	1913
Journal of the American Medical Association, The	Vol. LX	1913
Medical Directory, The		1914
Medical Press and Circular, The	Vol. CXLVII	1913
Medical Record	Vol. LXXXIII	1913
Medical Who 's Who, The		1914
Münchener medizinische Wochenschrift	Bd. II for	1913
Practitioner, The	Vol. XCI	1913
Progrès médical, Le		1913
Progressive Medicine	Vol. IV	1913
Public Health	Vol. XXVI	1912–13
Quarterly Journal of Medicine, The	Vol. VI	1912–13
Revue de Chirurgie	Tom. XLVII	1913
Revue hebdomadaire de Laryngologie	Tom. XXXIV, Vol. II	1913
Smithsonian Report for 1912		1913
Studies from the Department of Pathology, College of Physicians and Surgeons, New York	Vol. XIII	1913
Surgery, Gynecology, and Obstetrics	Vol. XVI	1913
Zentralblatt für Chirurgie		1913
Zentralblatt für Gynäkologie		1913
Zentralblatt für innere Medizin		1913

MEETINGS OF SOCIETIES.

Bristol Medico-Chirurgical Society.

December 10th, 1913.

Dr. P. WATSON-WILLIAMS, President, in the Chair.

The meeting was devoted to an **Exhibition of cases and specimens of Syphilis.**—Mr. ELWIN HARRIS showed a child with chronic tertiary ulceration of the scalp.—Dr. J. O. SYMES showed a patient with multiple swellings in and on the tibia and other bones, with a protein body in the urine. The patient was improving with antisyphilitic treatment; the Wassermann reaction was positive.—Dr. E. C. WILLIAMS stated that an infant, aged 5 months, with a gumma of the femur, which he was to have shown, had died forty-one days after an injection (intramuscular) of 0.05 gram of neo-salvarsan.—Dr. CAREY COOMBS, in showing a case of associated tabes dorsalis and aortic regurgitation, remarked that this was the not uncommon Babinski syndrome, and that syphilis was probably the cause

of aortic disease in 75 per cent. of cases.—Dr. BERTRAM ROGERS showed an infant, 2½ months old, in whom all symptoms had cleared up and the child put on weight after an intramuscular injection of 0.05 gram of neo-salvarsan.—Dr. WATSON-WILLIAMS showed patients illustrating typical tertiary syphilitic lesions of the nose, pharynx and larynx.—Dr. MICHELL CLARKE showed a case of associated congenital syphilis and Graves's disease, and said that he regarded the simultaneous occurrence as accidental.—Dr. J. R. CHARLES showed a case in which there were symptoms of tabes in association with plumbism; a positive Wassermann reaction was present, but might, it was thought, possibly be due to the lead.—Dr. J. R. KAY-MOUAT, among other specimens, showed one of the site of injection of salvarsan nineteen days after injection. The tissues showed the presence of arsenic in the centre with a surrounding area of hyperæmia and leucocytic infiltration.

January 14th, 1914.

Dr. P. WATSON-WILLIAMS, President, in the Chair.

Dr. MUNRO SMITH read notes on **Two Cases of Abdominal Tumour in the Neighbourhood of the Liver, Plainly Palpable and Visible during Life, which disappeared at Death.** The first case was that of a lady of 61, who began to feel unwell on September 30th, 1910, with nausea and weakness. By October 16th she was jaundiced slightly. She gradually became weaker, and the question of the presence of malignant disease of the liver arose. By November 16th the liver edge was two inches below the thoracic margin, and a nodule was felt in it. Jaundice deepened. The diagnosis of liver enlargement, probably cancerous, was confirmed by three consultants. The patient died on January 11th, 1911. An autopsy showed the liver to be small and soft, and tucked up under the ribs. No abdominal tumour or swelling present. The heart muscle was soft and pliable. The second case was very similar. The patient was a man of 71. Malignant disease of the liver was diagnosed. No tumour was palpable after death, though distinct and nodular before death. No autopsy.—Dr. JAMES SWAIN alluded to the simulation of tumours by reflex contraction of segments of the rectus muscle.

Dr. SYMES showed a specimen of **A dilated stomach showing the pyloric opening in the middle of the lesser curvature. Ulceration at the pyloric orifice.**

Dr. FORTESCUE-BRICKDALE showed a **Case of combined sclerosis.** Woman aged 36. Symptoms began last June and

have progressively increased. There are now spasticity, ankle and patellar clonus, and extensor plantar reflexes on both sides. Some weakness of right leg with anæsthesia, paræsthesia and analgesia. No muscular wasting. Arms and trunk normal.

Mr. HARTY showed a case of **Acute mastoiditis involving the outlying cells alone.** Symptoms: ear-ache for three weeks, no aural discharge, no signs of any perforation of membrana tympani. Subperiosteal abscess incised, antrum not opened. Recovery. (From the Ear, Nose and Throat Clinic of the Bristol Royal Infirmary, by kind permission of Dr. Watson-Williams.)

Dr. WATSON-WILLIAMS showed **Two patients on whom the intranasal frontal sinus operation has been performed after the method described by the exhibitor.** Entry to the fronto-nasal duct is gained by opening up and removal of the fronto-ethmoidal cells from a point corresponding to the anterior attachment of the middle turbinal, instead of by removal of the anterior end of the turbinal. A very free opening into the frontal sinus has been obtained in this way, thus ensuring efficient drainage without resorting to external operation.

February 11*th*, 1914 (*Afternoon Meeting*).

Dr. P. WATSON-WILLIAMS, President, in the Chair.

The meeting was devoted to **Demonstrations of Clinical Methods,** as follows:—

Electric Cardiography, by Professor STANLEY KENT and Dr. CAREY COOMBS.

Gas, Oxygen, Ether Apparatus for Anoci-association, by Mr. S. V. STOCK.

The Estimation of Percentages of Ether Vapour in Air, and the Estimation of the Temperature of Anæsthetic Vapours and Saline Solutions, with an Electrical Thermometer, by Mr. S. V. STOCK and Mr. J. D. FRY.

A Modification of Lambotte's Apparatus for the Surgical Treatment of Fractures, by Mr. C. F. WALTERS and Mr. H. W. GOODDEN.

Anæsthetic Methods, by Mr. A. L. FLEMMING.

Oesophagoscopy and the Technique of Radium Therapy in Malignant Strictures; and Intruments and the Methods of Intranasal Operation for Frontal Sinus Suppuration, by Dr. P. WATSON-WILLIAMS.

Insects as Carriers of Disease, and Methods of Preserving and Mounting Specimens, by Professor WALKER HALL and Dr. J. R. KAY-MOUAT.

The use of Maddox's Phorometer and Schiotz's Tonometer, by Mr. C. H. WALKER.

Methods of Estimating Blood Pressure, by Dr. J. M. FORTESCUE-BRICKDALE.

J. LACY FIRTH.
A. J. WRIGHT, *Hon. Sec.*

Local Medical Notes.

University of Bristol.—Students of the University have recently passed the following examinations :—

UNIVERSITY OF LONDON.—*First Examination for Medical Degrees, Part I :* A. Douthwaite, N. Kemm.

UNIVERSITY OF BRISTOL.—*M.B., First Examination, Part I :* E. J. Ball, D. G. Cossham, Eva Richmond, Evelyn B. Salter. *Final M.B., Ch.B.:* Maurice C. Barber.

D.P.H. LOND.—W. W. Pratt.

L.D.S. ENG.—*Chemistry :* A. J. Constance, A. L. Morgan, *Physics :* S. W. A. Davis.

M.R.C.P. LOND.—Cecil Clarke, M.D., Lond., J. M. Fortescue-Brickdale, M.D. Oxon.

APPOINTMENTS.

C. E. K. Herapath, M.D., has been appointed Medical Registrar to Bristol Royal Infirmary.

J. P. I. Harty, B.A., M.B., B.Ch., F.R.C.S., has been appointed Clinical Assistant to the Ear, Nose and Throat Department at the Bristol Royal Infirmary.

W. W. Salisbury, M.B., B.S. Lond., has been appointed Resident Medical Officer at the Hospital for Women, Soho Square, W.

F. H. Pickin, M.R.C.S., L.R.C.P., has been appointed Clinical Assistant at the St. Paul's Hospital for Skin and Urinary Disease, London.

C. A. Joll, M.B., B.S. Lond., F.R.C.S., has been appointed Honorary Assistant Surgeon at Royal Free Hospital, London.

Yours very truly.
R. Ogilvy.